

MAGIC

ISDN Telephone Hybrid System MAGIC TOUCH

Hardware/Software Operating Manual



MAGIC ISDN Telephone Hybrid System

MAGIC TOUCH

Hardware/Software Operating Manual

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REGISTRATION



If you are not already registered take a moment to read this.

Registered users automatically receive messages as soon as new software or other news on the *MAGIC ISDN Telephone Hybrid* is available.

The registration is done via the internet

<http://www.avt-nbg.de>

Then switch to **Service** and **Software Registration**.

Enter MAGIC ISDN Telephone Hybrid when asked "Which of the following products do you use (select one or more)?".

Afterwards define your own **User name** and your own **Password**¹.

As contact address enter at least your **Email address**.

Then send the registration.

After a short time you will receive the confirmation.

¹ Take care to remember your user name and password. The password is not known to us. In case you have forgotten your password, send us a short email with your user name. We will cancel your registry and you are able to register again.

INTRODUCTION

The *MAGIC ISDN Telephone Hybrid* system enables the forwarding of telephone calls to analogue or optional AES/EBU Audio interfaces. Since the system is based on a modular construction, it is possible to expand it as desired. The basic system supports a simultaneous Hybrid function up to three or four callers, as well as call forwarding to a selected number. With an extension system four additional channels are available, which can be used for additional callers or other call forwarding numbers. Besides, each system has an additional analogue interface. The maximum build supports up to 16 callers simultaneously *On Air*.

In contrast to previous systems, great emphasis has been put on using as little external wiring as possible. The system is able to realise functions such as digital mixing of callers, digital *Mix Minus*, *Echo Cancelling*, *AGC*, etc.

The configuration and operation of the system is made via the Windows application *MAGIC TOUCH*, included in the delivery of the Master system. The software is optimised for operation with a Touch screen.



Urgent users can find the essential basic configurations in „**Quick installation**“ CHAPTER 7.4, page 43.

Please also pay attention to the chapter: What do I have to set, if...

... I want to use MAGIC TOUCH LAN? (Page 122)

... I want to use MAGIC SCREENER? (Page 123)

... I want to use the MAGIC Hybrid Keypad of the PC? (Page 124)

... I want to use the MAGIC Hybrid keypad as a redundant mode? (Page 124)

Text conventions

To increase the readability of the document, the following text conventions are used throughout the document.

TAB. 1 **TEXT CONVENTIONS**

Formatting

Important terms are displayed in **bold**.

Descriptions and software functions are highlighted in *bold italic*.

S A F E T Y

Introduction

The unit described is designed to the latest technical parameters and complies with all national and international safety requirements. It operates with a high level of operational safety resulting from long development experience and stringent quality control in our company.

In normal operation this equipment is safe.

There are, however, some potential sources of danger that cannot be completely eliminated.

This Operator Manual therefore contains basic safety instructions that must be observed during system configuration and operation. The Operator Manual must be read before the system is used and the current version of the document must always be kept close to the equipment.

General safety requirements

In order to keep the technically unavoidable residual risk to a minimum it is imperative to observe the following rules:

- Transport, storage and operation of the unit/system must be under the permissible conditions only.
- Installation, configuration and disassembly must be carried out only by trained personnel and with reference to the respective documentation.
- The system must be operated by knowledgeable and authorised users only.
- The system/unit must not be operated unless it is in good working order.
- Any conversions or alterations to the system or parts of the system (including the software) must be carried out by qualified personnel from the manufacturer or by expert personnel authorised by our company. All alterations carried out by other persons lead to a complete exemption from liability.
- The removal or disabling of safety measures, the correction of faults and errors, and the maintenance of equipment must be carried out by specially qualified personnel only.
- Non-system software is used at one's own risk. The use/installation of non-system software can adversely affect the normal functioning of the system.
- Only use tested and virus-free data carriers.

Apperance of the safety instructions

All safety instructions include a *Symbol* that classifies the danger and a *Text-block*, that contains descriptions of the type and cause of the danger, the consequences of ignoring the safety instruction and the measures that can be taken to minimise the danger.

Symbol	Type and cause of danger
	Possible consequences of ignoring the safety instruction.
	Measures to minimise the danger.

Classification of danger

There are five class of safety instructions "danger", "warning", "caution", "notice" and "important". The classification is shown in the following table. .

TAB. 2 SIGNAL WORDS AND EFFECTS WHEN IGNORING THE SAFETY INSTRUCTIONS

Result classification	Death			Serious injury			Minor injury			Material damage ¹			Fault ²		
	definite	likely	possible	definite	likely	possible	definite	likely	possible	definite	likely	possible	definite	likely	possible
DANGER ³															
WARNING															
CAUTION															
NOTICE															
IMPORTANT															




¹ damage to product or product environment

² considerable impairment to operation

³ this danger class is not required for MAGIC ISDN Telephone Hybrid.

Symbols

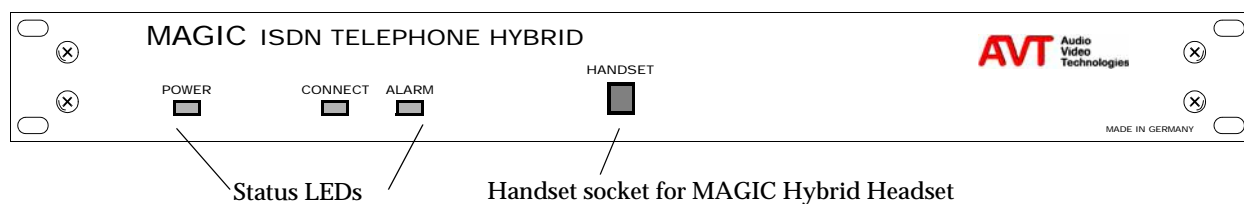
Following symbols are used:

TAB. 3	SYMBOLS
Symbol	common usage
	DANGER, WARNING: Warning about dangerous electrical voltage
	CAUTION, NOTICE: Common warning about a danger or wrong operation
	IMPORTANT: Important notice or tip

The functions of the *MAGIC ISDN Telephone Hybrid* are included in a single unit. The system is designed for mounting in a 19" rack (1 HE).

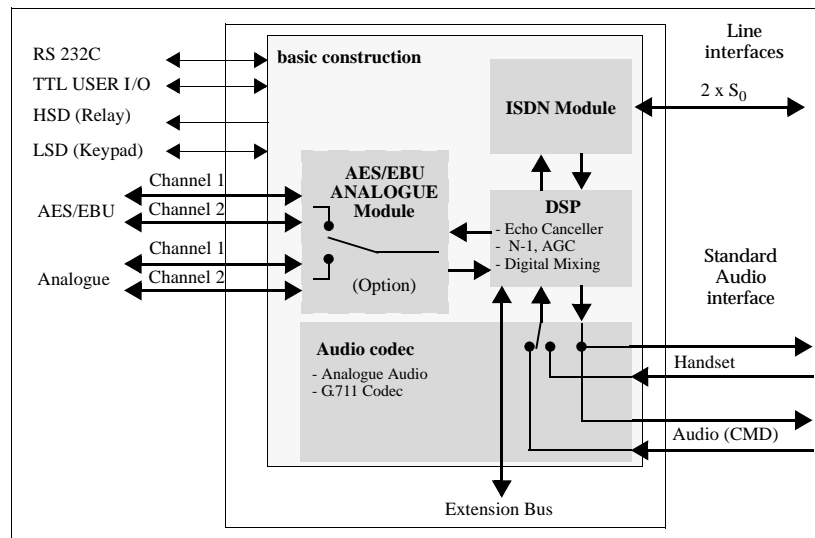
The system can be expanded with the *AES/EBU/Analogue module*. This module provides two additional analogue inputs/outputs as well as two digital inputs/outputs (physically: one digital AES/EBU interface).

FIG. 1 FRONT VIEW: MAGIC ISDN TELEPHONE HYBRID



The block diagram of the system is shown in Fig. 2.

FIG. 2 THE BLOCK DIAGRAM OF THE MAGIC ISDN TELEPHONE HYBRID



2.1

Functionality

The Telephone Hybrid system has a maximum of four *MAGIC ISDN Telephone Hybrids*, which are connected via the *Extension Bus*. Therefore a maximum of $8 S_0$ interfaces as well as 4 analogue Audio inputs and Audio outputs are available to the user. Additionally, a *Handset* or *MAGIC Hybrid Headset* can be connected to the front side of the system.

With the optional *AES/EBU/ANALOGUE Module*, any part of the system can be extended by two Audio inputs/outputs.

Via the Telephone Hybrid system - depending on the build - up to 16 callers can be put *On Air* or in *Pre Talk* simultaneously. Additionally, there are configurable call forwarding possibilities.

For each caller, a digital *Echo Canceller* is available. This echo canceller is necessary to suppress disturbing echos when the caller is using a normal analogue telephone.

Likewise, the Automatic Gain Control (AGC) can be switched on for each caller.

To suppress disturbing noise from callers who are currently not speaking, the *Expander* can be activated.

In the conference mode there is the possibility of mixing all callers digitally

and connecting the mixed signal to one conference. The callers get the digitally generated *Mix Minus* signal.

Three *Relays* (HSD interface) are available for external signalling.

Their configuration and operation is made by the *MAGIC TOUCH* Windows software included in the delivery.

3.1**Magic Hybrid Keypad 4/7/12**

Optionally, the *MAGIC Hybrid Keypad 4/7/12* can be connected to the system in parallel to the operating software. This separate keypad with illuminated display, enables a (limited) operation of the system for a maximum of four, seven or 12 callers, in case the PC crashes.

FIG. 3 MAGIC HYBRID KEYPAD 4

3.2**Magic Hybrid Keypad PC**

Instead of using Touch screens, the system can also be operated independently via the optional *MAGIC Hybrid Keypad PC* for a maximum of 7 callers. The keypad can be connected directly to the PC.

FIG. 4 MAGIC HYBRID KEYPAD PC

The optional *AES/EBU/ANALOG Module* extends the system by two further analogue or two digital AES/EBU inputs and outputs (switchable). Via the MAGIC TOUCH software, each Audio interface can be configured as desired to the greatest possible extend.



Subsequent installation of the module can only be made in our factory.

Therefore, three analogue inputs (Audio interface already existing in the system + two further modules) and three analogue Audio outputs are available when selecting the **analogue** input Audio interface (see Fig. 5). The two analogue outputs of the modules are, additionally, activated in parallel, on the digital Audio interface of each module.

FIG. 5 AUDIO INTERFACES WHEN SELECTING THE ANALOGUE INPUT



If the **digital** inputs of the module are selected (see Fig. 6), one analogue and two digital Audio inputs are available as well as two digital and one analogue output. The digital outputs of the module are additionally activated in parallel to the analogue Audio interfaces of the module. The digital input as well as the output have their own sample rate converter. The word clock can be read or fed in via the BNC connector.

Please note that the two inputs/outputs are physically **one** AES/EBU interface. The outputs are always connected in parallel.

FIG. 6 AUDIO INTERFACES WHEN SELECTING THE DIGITAL INPUT



Maximum number of Audio interfaces

The maximum number of available Audio interfaces depends on the number of B channels. The sum of the Audio interfaces **and** B channels (visible channels + call forwardings) is limited to **24** (e.g. 12 Audio interfaces and 12 B channels). The maximum number of Audio interfaces can be **twelve**¹ in the maximum build (see CHAPTER A3, page 141).

¹ Until release 3.0, a max. of only seven Audio interfaces are available.

3.4**Headset/Handset**

The *MAGIC ISDN Telephone Hybrid* has an Audio connection for a *Headset/Handset*. Via this headset/handset e.g., the Pre Talk can be carried out. Switching between the *handset* and an Audio input of the system is made via the *MAGIC TOUCH*, *MAGIC TOUCH LAN* or the *MAGIC Hybrid Keypad*.

If the *handset is used*, a separate screener place can be implemented. In this case, the presenter uses his headset for the Pre Talk. The software is implemented in such a way that faulty operation between presenter and screener place is not possible.

The supply line between *headset* and Hybrid system can be extended up to 20 meters, since the Audio interface is implemented as an electronically balanced interface.

3.5**MAGIC Hybrid Headset**

FIG. 7 MAGIC HYBRID HEADSET

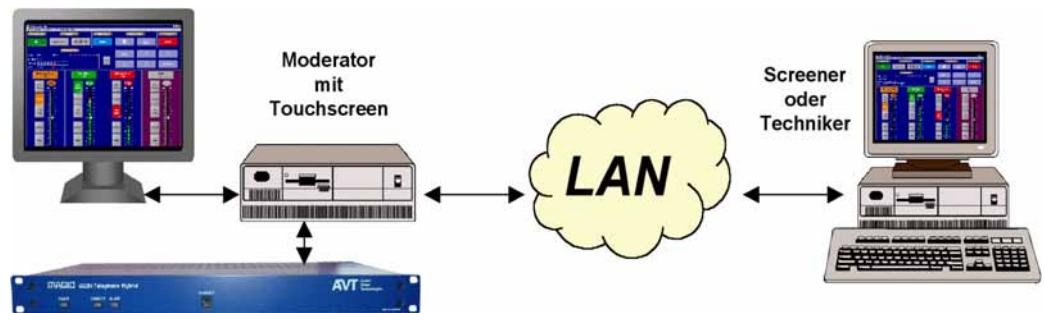


For persons who are telephoning often, the *MAGIC Hybrid Headset* can be used instead of the handset.

4.1

MAGIC TOUCH LAN

FIG. 8 USAGE OF THE MAGIC TOUCH & MAGIC TOUCH LAN SOFTWARE



The *MAGIC TOUCH LAN* software supports independent operation of *MAGIC ISDN Telephone Hybrid* systems via the local Ethernet network. The application can be used on any PC connected to the LAN. The operation is made via the TCP/IP protocol and accesses to the *MAGIC TOUCH* software running on the PC that is connected to the ISDN Telephone Hybrid System.

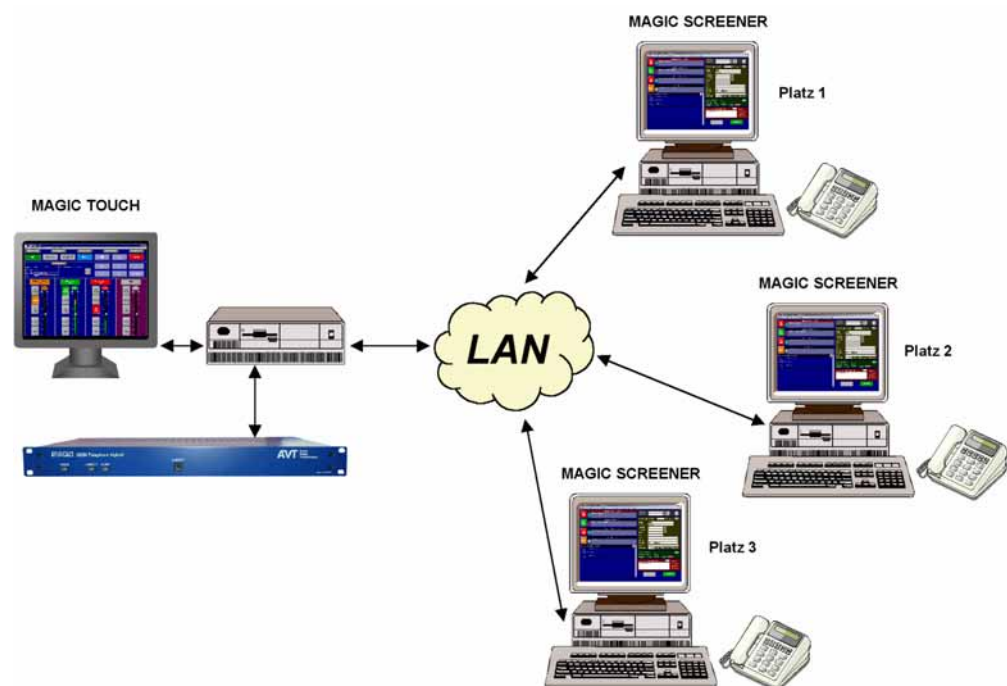
The *MAGIC TOUCH LAN* software can be used on a maximum of **seven** places simultaneously. Applications are for example, screening via a separate screening place or the complete operation of the system via a technician.

The *MAGIC SCREENER* database supported, screener software enables a connection between the *MAGIC TOUCH* control software, the feature rich screening and the administration of all callers. Also, remote control such as dialling or switching of single lines of the ISDN Telephone Hybrid, is possible.

The connection between the *MAGIC TOUCH* and the *MAGIC SCREENER* software is established via the LAN with the help of the TCP/IP protocol. The caller data is stored in a central data base to which all applications have access.

In principal, the *MAGIC SCREENER* can be installed as many times as desired in the local network. Therefore, simultaneous screening of several screening places is possible.

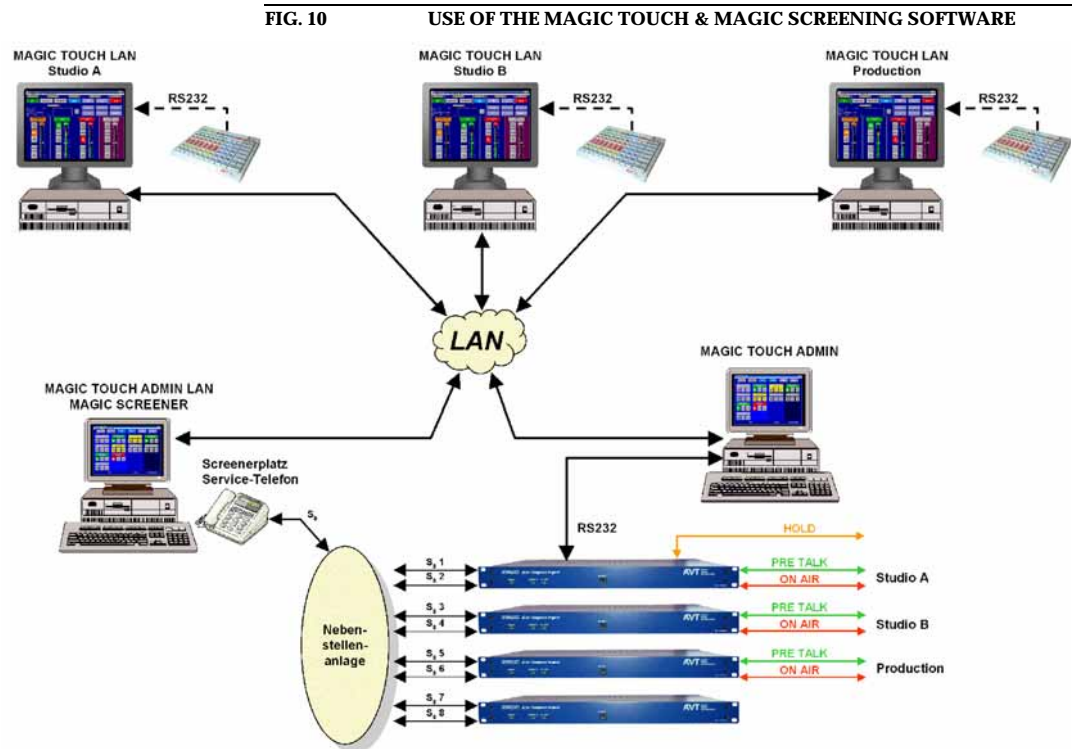
FIG. 9 USAGE OF THE MAGIC TOUCH & MAGIC SCREENING SOFTWARE



The *MAGIC TOUCH ADMIN* software enables the administration of up to four *MAGIC TOUCH LAN* clients, who use a common Central Hybrid System.

For each studio, the number of caller lines and Audio interfaces is assigned via a *Preset*. Each studio sees, on its *MAGIC TOUCH LAN* screen, only the lines assigned. An important advantage of this solution is the flexible assignment of a studio: therefore, a particular show can be broadcast from any studio without any major changes to the PABX or of the Audio wiring.

Optionally, *MAGIC TOUCH ADMIN LAN* software is available, which can be used, e.g. for a common screening of all caller lines.



5.1

Mounting

With its dimensions (W × H × D) of 439 mm × 44,5 mm (1 HE) × 300 mm, the MAGIC ISDN Telephone Hybrid System can be operated as a table-top device or can be mounted in 19" racks. Additionally, mounting brackets are provided for an ETSI rack.

During the installation, care should be taken to ensure that the bending radius of the cables is always greater than the minimum allowed value.

If the *MAGIC ISDN Telephone Hybrid* is installed in a rack, it should be ensured that sufficient ventilation is provided. It is recommended that approx. 3 cm clearance is left next to the openings. As a rule, the ambient temperature of the system should not lie outside the range +5°C to +40°C. These limits are of particular importance if the system is inserted in a rack.

During operation, the humidity must lie between 5% and 85%.



Incorrect ambient temperature and humidity can lead to equipment failure.

Operation of the unit outside the above limits invalidates the warranty.

The operation of the system must therefore lie within the specified limits.

5.2

Connection to the mains supply

The system can be operated with a mains voltage between 90 V and 253 V and a mains frequency between 45 Hz and 65 Hz. The power consumption has a maximum value of approx. 30W. In accordance with safety regulations, the housing must be earthed (grounded). This earthing is normally realised via the protective earth (or ground) conductor of the mains cable. If the mains cable does not have a protective conductor, however, the device **must** be earthed via its earthing bolt.



Dangerous voltage in case of inadequate earthing!

If the earthing is defective or lacking, hazardous voltages can be present on the housing in the event of a fault.

Do not use extension cables without an earthing conductor!

In case of doubt provide additional earthing!

After switching the system on, the green *POWER* LED should light up. An internal reset is then triggered. After approx. 45 seconds, the system is ready for operation, when the red LED *ALARM* stops blinking.

5.3

Alarm indication LEDs

The *MAGIC ISDN Telephone Hybrid* has three LEDs for status indication.

- (1) **POWER** green
Lights up when system is ready for operation.
- (2) **CONNECT** green
Lights up if at least one telephone connection is established.
- (3) **ALARM** red
Lights up if a fault has occurred in the unit. The Windows PC software provides more detailed information about the error (see CHAPTER A1, page 137).

5.4

Controls on the front panel

The system has no controls on the front panel; there is only a socket for the *Handset* or the *MAGIC Hybrid Headset* (not included in the delivery).

5.5

Changing the fuse

The mains system is protected by a fuse, which is soldered into the system. **Only qualified personnel** are allowed to change the fuse.



Dangerous voltage when the equipment is opened!

The unit should only be repaired by experienced technicians or our expert personnel.

5.6

Cabling of the system

The following figures show with help of examples, the general cabling of the system.

The assignment of the Audio and relay interfaces are only an example. The assignment can be configured in accordance with your personal requirements (see CHAPTER 7.7.3.14, page 98).



You must not forget to connect the included dongle(s) to the Slave system(s), since the basic function of a slave is configured by this. Please pay attention to the numbering of each dongle.

When using a Master system, no dongle has to be connected.



If a combination of Master and Slave system is used, not all available S_0 connections need to be connected to the ISDN network. If you are working with a maximum of only 4 B channels, but also want to use the *Pre Talk* function, you only need to connect 2 S_0 interfaces to the Master system.

5.6.1

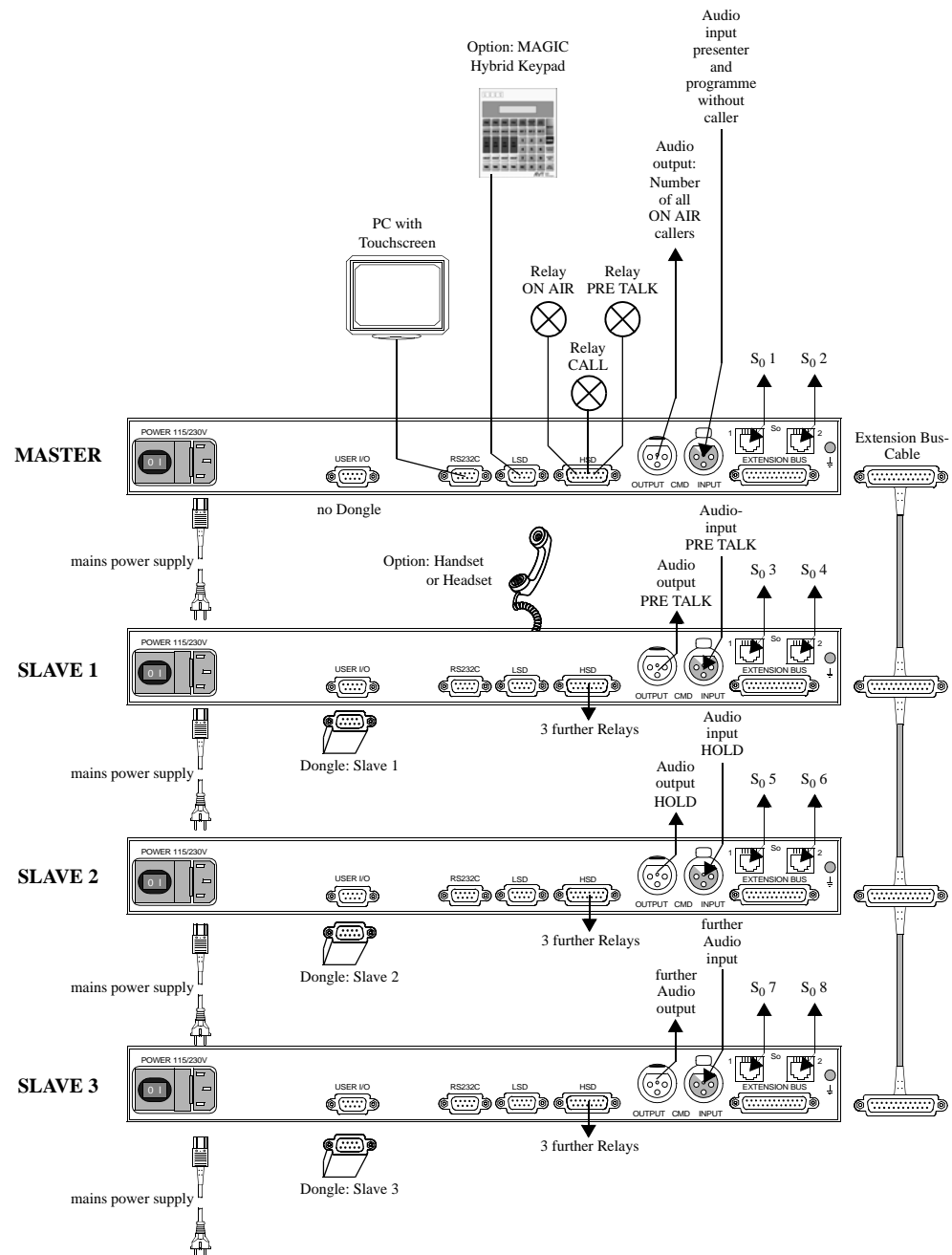
... without AES/EBU/ANALOGUE module

In this wiring example (Fig. 11, page 32) a *Pre Talk*, a separate *Hold* and an *On Air* Audio interface are used. A fourth Audio interface is also available in the Slave 3 System for, e.g., an **alternative On Air** or **Pre Talk Line** (see CHAPTER 7.7.3.1.2, page 60).

The function of the relays can be programmed as desired (see CHAPTER 7.7.3.15, page 102). Useful is e.g., the use of a relay for **incoming calls** and for operating the mixer as soon as a line is switched to *Pre Talk* or *On Air*.

For redundancy purposes, a *MAGIC Hybrid Keypad* can be connected in parallel to the Master System. This keypad ensures that if the PC crashes, the caller lines can still be operated.

FIG. 11 WIRING OF THE MAXIMUM SYSTEM BUILD WITHOUT AES/EBU/ANALOGUE MODULE



5.6.2

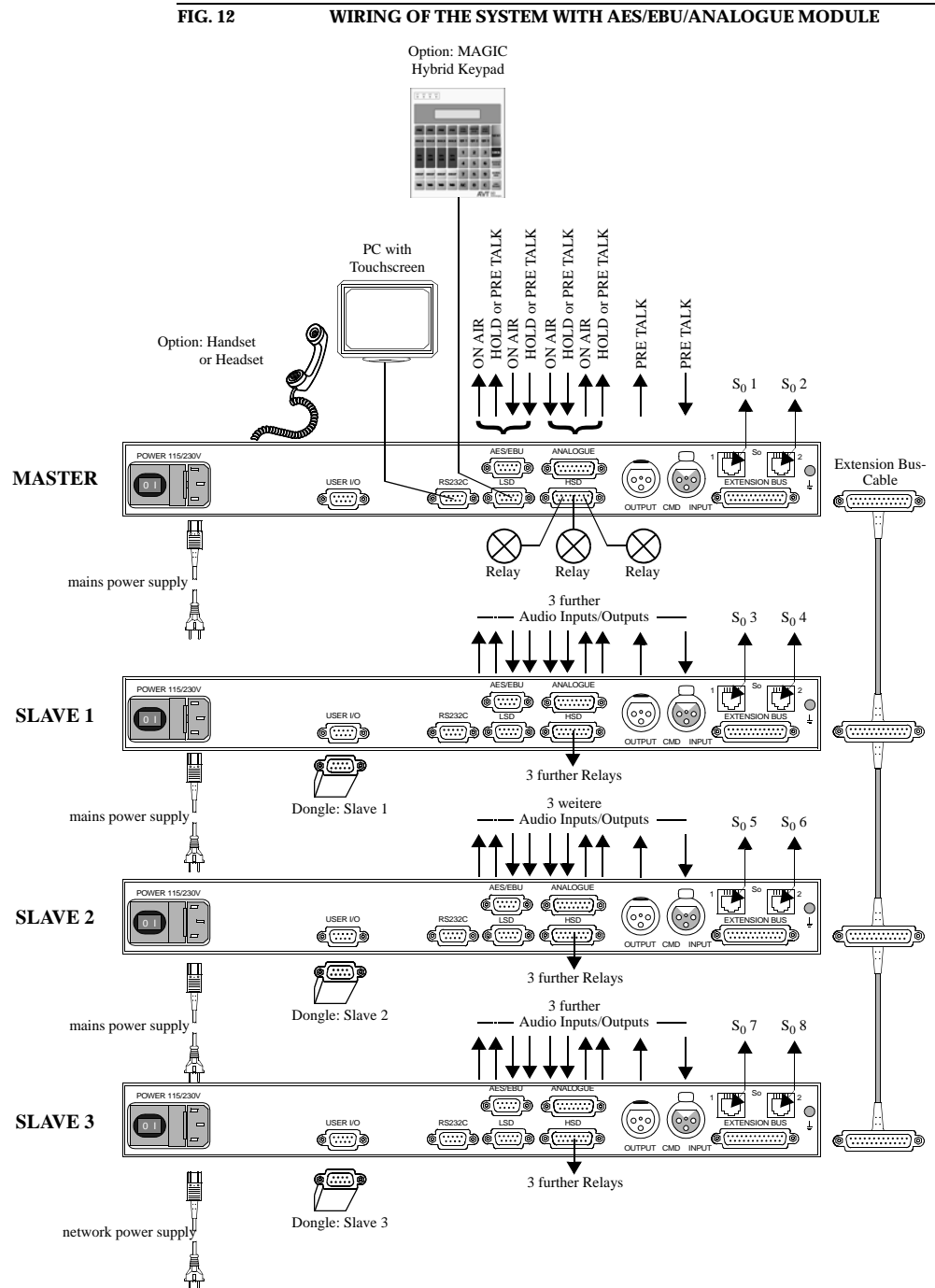
... with AES/EBU/ANALOGUE module

Via the AES/EBU/ANALOG module, the Audio interfaces can be configured as desired. Possible applications for several Audio interfaces can be found in CHAPTER 6 "Operating Modes" and in different chapters of the MAGIC TOUCH Software.

**Maximum number of Audio interfaces**

The maximum number of available Audio interfaces depends on the number of B channels. The sum of the Audio interfaces **and** B channels (visible channels + calls forwarded) is limited to **24** (e.g. 12 Audio interfaces and 12 B channels). The maximum number of Audio interfaces is **twelve**¹ in the maximum build (see CHAPTER A3, page 141).

¹ Until release 3.0 a maximum of only seven Audio interfaces is available.



6 OPERATING MODES

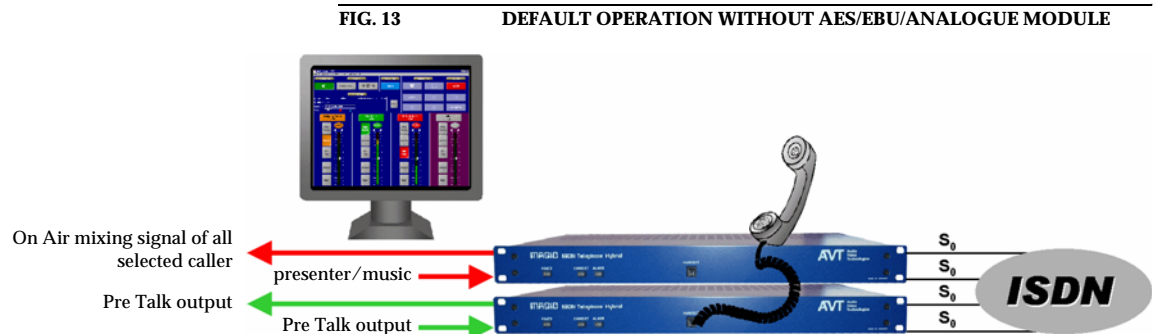
The *MAGIC ISDN Telephone Hybrid* system has a very flexible implementation. Therefore, nearly all kinds of applications can be realised. In the following, the different operating modes/possibilities are displayed. Of course, the displayed operating modes can be mixed. Further possibilities can be found in the description of the software functionalities.

6.1 Default operating mode

In this operating mode, the system is used with its basic functions:

- Operation only via the local Touch screen (e.g. for a presenter who uses all functions on his own)
- Use of at least two Audio interfaces for *Pre Talk* and *On Air*.
- The Pre Talk can be done via the *Pre Talk* Audio interfaces or via the optional *handset*.

6.1.1 ... without AES/EBU/ANALOGUE module



Without the *AES/EBU/Analogue module* (see Fig. 13) at least two systems are necessary, to ensure that two Audio interfaces are available. Additionally, up to four ISDN S_0 lines for 8 callers are available.

By installing further *MAGIC ISDN Telephone Hybrid Slave* systems as well as *AES/EBU/Analogue Modules*, the system can be upgraded according to requirements.

6.1.2 ... with the AES/EBU/ANALOGUE module

When using the *AES/EBU/Analogue Module* (see Fig. 14) one system is enough for the *Pre Talk* and *On Air* functionality with two ISDN S_0 lines for four callers. The free Audio interface can be used, e.g. for a separate *Hold* signal.

By installing further *MAGIC ISDN Telephone Hybrid Slave* system(s) as well as *AES/EBU/Analogue Modules*, the system can be upgraded according to re-

quirements.

FIG. 14 DEFAULT OPERATION WITH AES/EBU/ANALOGUE MODULE



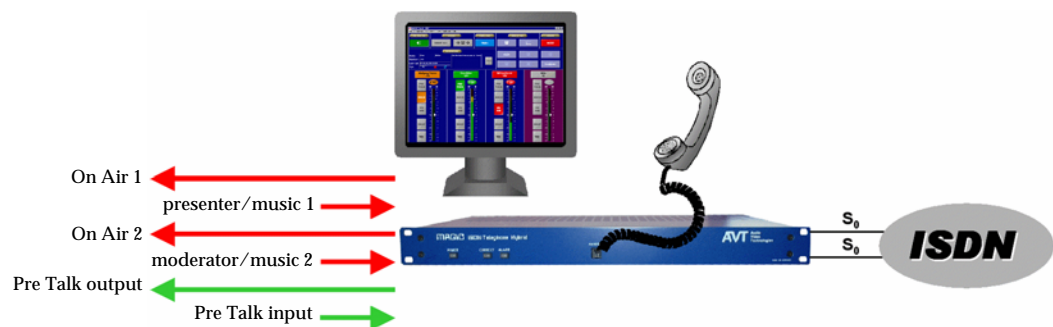
6.2

Multi fader operation with AES/EBU/Analogue module

In this operating mode the callers are not mixed in the system, they are released separately on different Audio lines:

- Usage of at least **two** alternative *On Air* Audio interfaces and one *Pre Talk* Audios interface. Depending on the system build, a maximum of **four** separate *alternative On Air* lines can be installed (see CHAPTER 7.7.3.1.2, page 60).
- The Pre Talk can be done via the *Pre Talk* Audio interface or via the optional *handset*.

FIG. 15 MULTI FADER OPERATION WITH AES/EBU/ANALOGUE MODULE



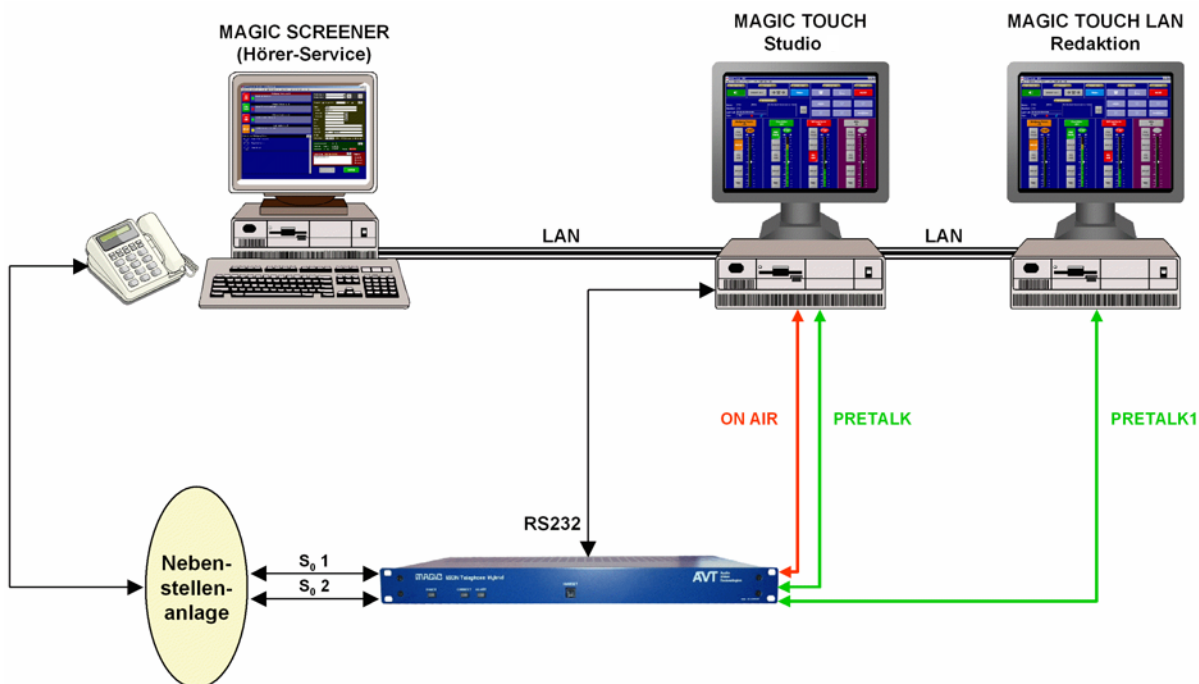
6.3

Multi-Pre-Talk with AES/EBU/Analogue module

In this operating mode, a screener place is connected in parallel to the studio via another *alternative Pre Talk* Audio interface. The *Pre Talk* of the presenter and the *Pre Talk* of the screener can be used independently. Depending on the system construction, up to **six alternative Pre Talk** lines are possible.

The screener can talk to the callers via a normal telephone and with the help of the call forwarding function.

FIG. 16 MULTI-PRE-TALK WITH AES/EBU/ANALOGUE MODULE



The configuration of the system is done by the Windows PC software **MAGIC TOUCH**, included in the delivery.

7.1

Hardware requirements

The PC must have the following minimum requirements:

- IBM PC AT, IBM PS/2 or 100% compatible
- Pentium Processor (> 266 MHz) recommended
- Windows 95B/98/ME/2000/XP operating systems
- 5 MB available hard disk space
- screen resolution of 1024 x 768 or restricted to 800 x 600 pixels (max. 5 caller lines)
- at least one available RS232 serial interface
- Microsoft, IBM PS/2 or 100% software compatible mouse

7.2

Installation of the Windows PC Software MAGIC TOUCH

Insert the included disk in the disk drive and press the **START** button on Windows 95B/98/ME/2000/XP. Select the sub menu item **Run...** and insert into the command line

<drive name:>setup.exe

(e.g. A:setup.exe).

Follow the installation program instructions.

After the installation start the software , by clicking the **MAGIC TOUCH** symbol.




Connect the PC via a null modem cable (pin 2 and pin 3 are crossed, pin 5=GND) to the system.

Turn the system on.

The red blinking **ALARM** LED signals that the system is booting. After approx. 45 seconds the LED stops blinking. The system is now ready for operation.



The de-installation software is started by clicking the ***uninstall*** symbol. 
Uninstall

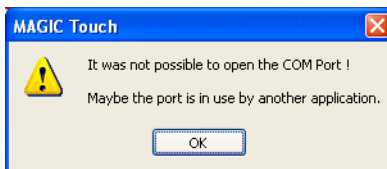
7.3

Configuration of the COM-Port

To configure the system, first the serial connection between PC and system has first to be established.

In case of a faulty connection between the PC and the system the following error message appears after a short time:

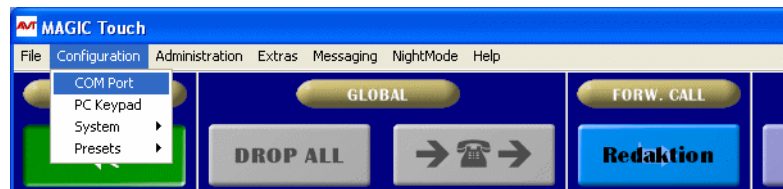
FIG. 17 ERROR MESSAGE WHEN COMMUNICATION IS INTERRUPTED



To rectify the fault, the correct interface has to be chosen.

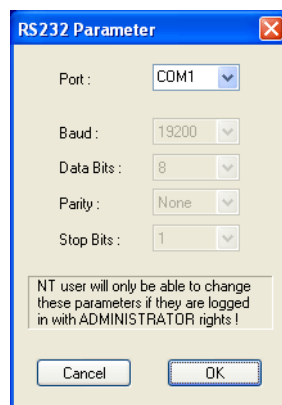
From the **Configuration** menu, select the **COM Port** submenu.

FIG. 18 CONFIGURATION MENU → COM PORT



Adjust the **Port**, which is connected to your PC. All other parameters, for example baud rates cannot be changed. After pressing the **OK** button, the error message should disappear, otherwise please check the cabling and the chosen COM port.

FIG. 19 COM PORT



RS232 Parameter

Port : COM1

Baud : 19200

Data Bits : 8

Parity : None

Stop Bits : 1

NT user will only be able to change these parameters if they are logged in with ADMINISTRATOR rights !

Cancel OK

**Windows NT4.0/2000/XP**

When using Windows NT/2000/XP, the setting of the COM port can only be done by an administrator. Settings can be changed but they will not be accepted.

For configuration always log in as an administrator.

For a quick installation the most important settings will now be described. Make sure that the system is turned on and that at least the PC is connected to the system via the RS232 null modem cable. For the first test, the ISDN lines should also be connected.

- (1) Open the system configuration via **Configuration** → **System** → **Edit** and go to the link **Slave Search**. Then press the **Auto detect** button. After a short time all **Slave** systems will be displayed.
For details see CHAPTER 7.7.3.2, page 69.
- (2) Change to the link **S0 Line**. Set via **Number of B channels visible** how many lines shall be visible. If the system is operated through a PABX enter in the **1st. external Prefix Number** submenu the prefix number (normally "0"). In most cases the **Skip Prefix Number on incoming call** option has to be set additionally. If a telephone that transmits its number calls the Hybrid System, the prefix number **must not** be displayed.
For details see CHAPTER 7.7.3.4, page 73.
- (3) Click on the link **Audio Lines**. For each existing system, set in the **AES/EBU/Analogue Module** submenu whether you want to use either the analogue or the digital input. When using digital inputs, the clock source has also to be set in the **Clock source of digital output** submenu (mostly **Recovered Clock**).
For details see CHAPTER 7.7.3.14, page 98.
- (4) In **Audio input/output interface assignment**, press the **Default Settings** button. The **Pre Talk** and **On Air** Audio interfaces are preselected as default. Of course if you already know which Audio interfaces shall be used for which function, the selection can be made manually.
For details see CHAPTER 7.7.3.14, page 98.
- (5) When using the analogue Audio interfaces the nominal level for the input and the output for each system must be set via the **Audio Level** link. When using the digital Audio interfaces the nominal level cannot be changed.
For details see CHAPTER 7.7.3.9, page 86.
- (6) Click on the link **Signal Processing**. Press **Set AGC on/off for all lines** and the AGC is turned off for all lines (**off**). Afterwards press **Set Echo Canceller on/off for all lines** and the echo canceller is turned on (**ON**). Subsequently, press the **Default Settings** button to set the default settings for the **AGC** and the **Expander**.
For details see CHAPTER 7.7.3.11, page 89.
- (7) Switch to the **Hold Signal Recording/Source** link. Select the **Hold** signal source in the **HOLD Signal Source** submenu. Now the Audio signal which is heard by the callers in the **Hold** mode (normally **On Air**) is defined.
For details see CHAPTER 7.7.3.10, page 87.
- (8) Press **OK**. The settings will be stored on the PC and partly in the system. The system is now ready for operation.

7.5

Operating elements of the MAGIC TOUCH Software

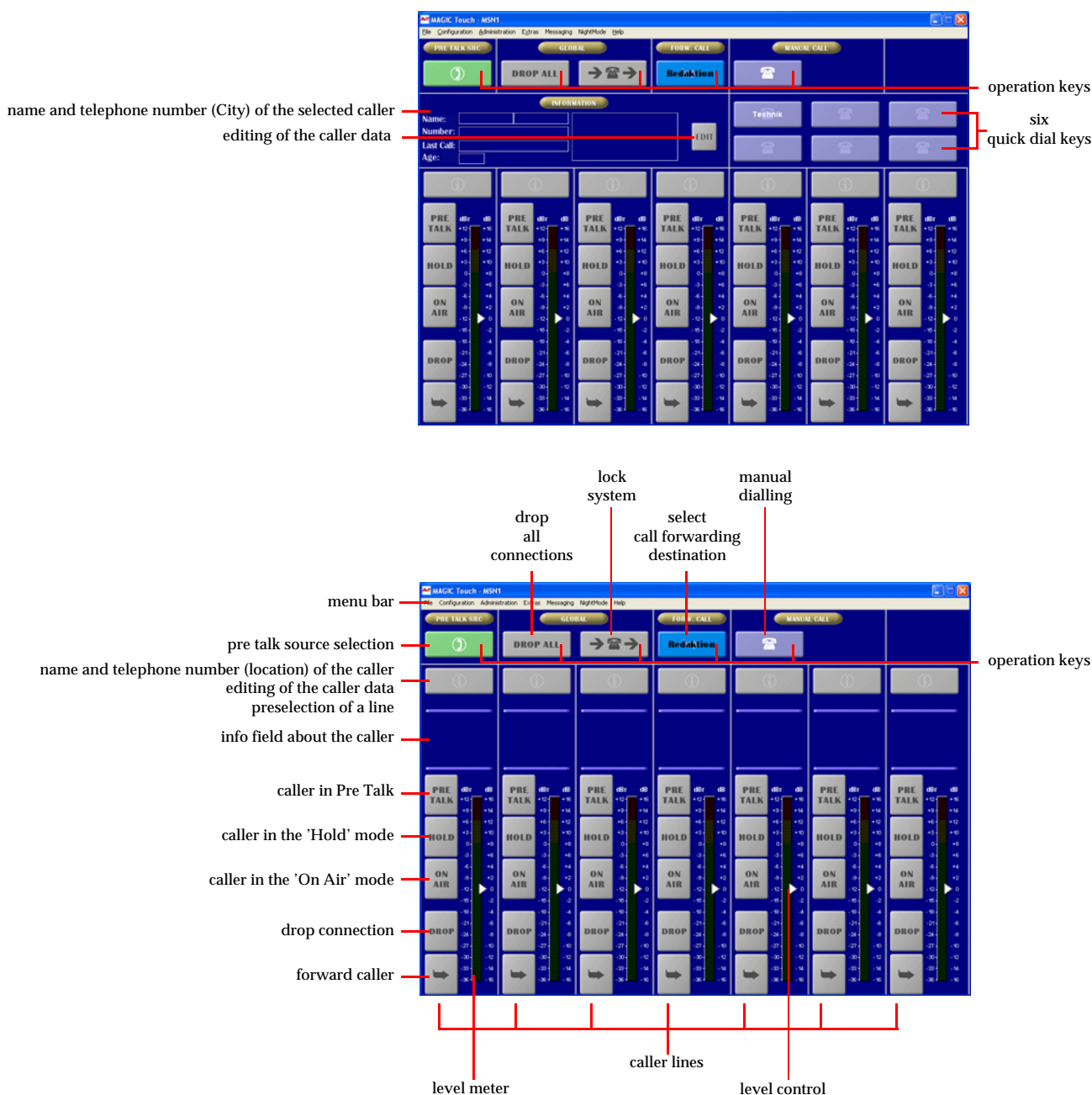
After starting the software, the main panel of the **MAGIC TOUCH** application appears. Depending on the configuration, two different screen contents are displayed:

- only one detailed information field for all callers is displayed
- each caller has his own information field

The main user elements are shown in Fig. 20.



For the following screenshots, the second possibility was used.

FIG. 20 MAIN PANEL OF THE MAGIC TOUCH SOFTWARE



7.5.1 Operation keys

7.5.1.1 PRE TALK SRC (Pre Talk Source)

With the help of the **PRE TALK SRC** button it can be selected whether the Pre Talk should be done via the optional **handset** ( key setting) or via the Audio input which is configured as **Pre Talk** ( key setting) (see CHAPTER 7.7.3.14, page 98).




The switch over of the **Pre Talk Source** can also be automated. In this case for example, the presenter must always use the Audio input and the Pre Talk source must always use the **Handset** (configuration in the **LAN** → **Restrictions** → **Pre Talk Source Auto Following** submenu (see CHAPTER 7.7.3.13, page 95))



The **Pre Talk** mode is automatically signalled by the **Pre Talk Relay** (see CHAPTER A4.5, page 146).



If the presenter switches the caller into **Pre Talk** the **Pre Talk Relay** can be used to switch in a mixer automatically. If the **Pre Talk Source** is automated (see previous info box) the **Pre Talk Relay** will also switch in the mixer only if the pre talk source is in pre talk with the caller. In the **General** → **Pre Talk relay** submenu choose the **Pre Talk Signalling combined with Pre Talk Source** option to switch in the mixer only if the presenter is in pre talk via the Audio input. Do not forget to set in the **Relay** submenu (see CHAPTER 7.7.3.15, page 102) the **Audio Line** → **PRE TALK** assignment for at least one relay to ensure that a **Pre Talk relay** exists.

7.5.1.2 GLOBAL (Drop All, Lock)


With the help of the  (drop all connections) operating key all connections are dropped. Not included in this function are lines defined as **VIP** lines (see CHAPTER 7.7.3.5, page 76).

If the  (Lock) button is active ( key setting), all lines of the system are blocked for incoming calls. Lines defined as **VIP** lines are excepted (see CHAPTER 7.7.3.5, page 76). Outgoing calls are possible on any line.



If the lock button is active, the callers hear the busy signal. This function depends on the PABX. Main connections always support this function.

7.5.1.3 Forw. Call (Call forwarding)

The  **Call Forwarding** button enables the selection of two predefined call forwarding destinations. The second call forwarding destination is only for temporary use. This means that after forwarding the first call the call forwarding destination is set again.

The call forwarding destinations are defined in the submenu **S₀ Line** → **Call Forwarding** → **1st. telephone number for Call Forwarding** and **2nd. telephone number for Call Forwarding** (see CHAPTER 7.7.3.4, page 73). The corresponding **Name** of the call forwarding is displayed on the operating key.



If no telephone number is entered, either the manual dial panel or the telephone book (depending on the *Miscellaneous settings* (see CHAPTER 7.7.3.1.8, page 68)) will be opened. Therefore the temporary call forwarding is possible to any destination.

This function is a good possibility for the call forwarding destination. Enter for example '*Manual*' as *Name* to keep the function in mind.

7.5.1.4

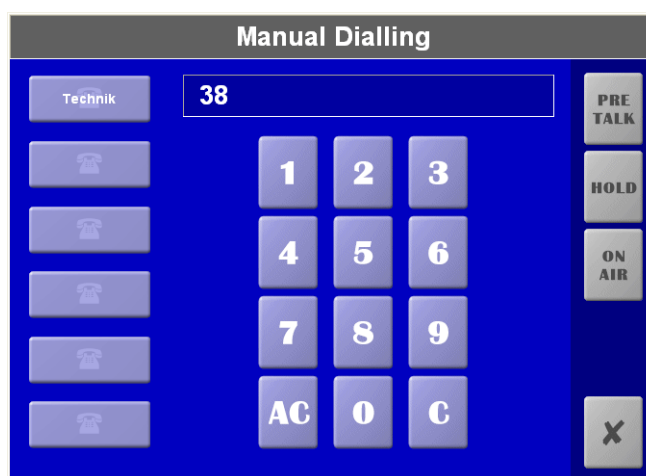
Manual Call

7.5.1.4.1

Manual call by entering the telephone number

The operating key opens the dialog for manual dialling.

FIG. 21 DIALOG FOR MANUAL CALL



The telephone number is entered by the ... keys.

Alternatively, the keypad of the PC can also be used. The connection is established by pressing the **Enter** button . If the connection is established via the **Enter** button the caller is always put in the **Hold** mode.



In the case that the Telephone Hybrid system is operated through a PABX, the prefix number (the number is usually "0") has to be entered for external calls (see CHAPTER 7.7.3.4.3, page 75).

Key deletes the complete entry, key deletes only the last character of the entry.

The establishment of the connections is activated by pressing either the (Pre Talk) button, the (Hold) button or by pressing the (On Air) button. Automatically, the next available line is used.

To close the dialog without establishing a connection, press key .

These six keys are programmable quick dial keys. They can be programmed via the **Quick Dial** system configuration (see CHAPTER 7.7.3.8, page 84).

7.5.1.4.2

Manual call using the telephone book


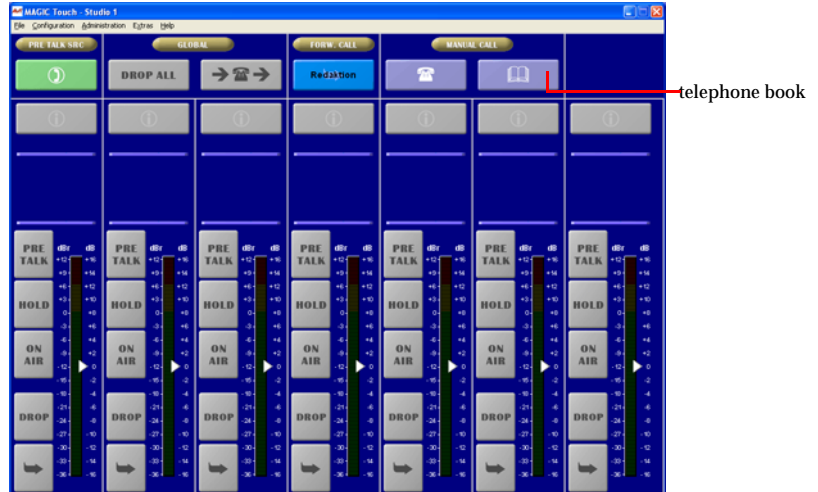
If the **Database Support** option in the **Database** menu (see CHAPTER 7.7.3.3, page 70) is active, the telephone book function is also available next to the manual call. The telephone book is designed as a database for the whole system. The  button is now visible in the **MAGIC TOUCH** panel.

FIG. 22 MAGIC TOUCH WITH TELEPHONE BOOK




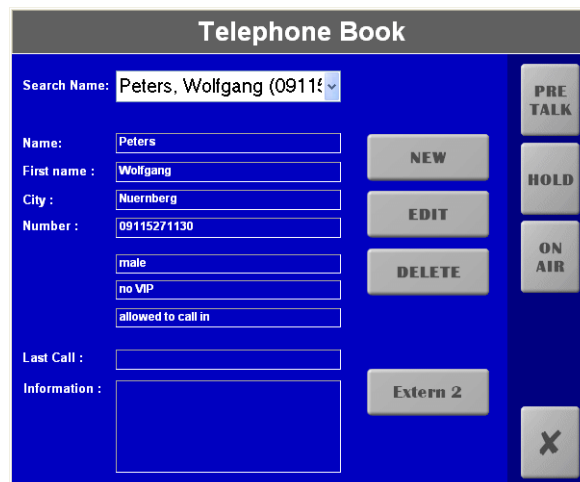
Pressing the  button opens the telephone book.

FIG. 23 TELEPHONE BOOK


 The screenshot shows the 'Telephone Book' window. It has a title bar 'Telephone Book'. Below the title bar, there is a 'Search Name:' field with a dropdown menu showing 'Peters, Wolfgang (0911)'. To the right of this field are buttons for 'PRE TALK', 'HOLD', 'ON AIR', and 'X'. Below the search field, there are input fields for 'Name:', 'First name:', 'City:', 'Number:', 'male', 'no VIP', and 'allowed to call in'. To the right of these fields are buttons for 'NEW', 'EDIT', 'DELETE', and 'Extern 2'. At the bottom, there is a 'Last Call:' field and an 'Information:' field.
**Windows NT4.0/2000/XP**




When using Windows NT/2000/XP, the essential files for the use of the database support are part of the operating system.

All other Windows operating systems need the MS® Access 2000 database software or the optional **MAGIC SCREENER** database software, which includes a Runtime Version of MS® Access 2000.

In the **Search Name** field the desired name can be entered. The names in the telephone book are listed in alphabetical surname order. All relevant entries are displayed automatically. By clicking a name the respective data record of the caller is shown. Available information is:


- Name


- First Name
- City
- Number
- Gender (male, female or unknown)
- VIP (Very Important Person)
- Lock (allowed to call in = caller is not blocked or not allowed to call in = caller is blocked)
- Last Call
- Information/Topic


The establishment of the connection of the currently selected caller is made by pressing the buttons  Pre Talk,  Hold or  On Air. The next available line is chosen automatically.

To close the dialog without connection, press the  button.

By pressing the  (NEW) button, a new caller can be entered.

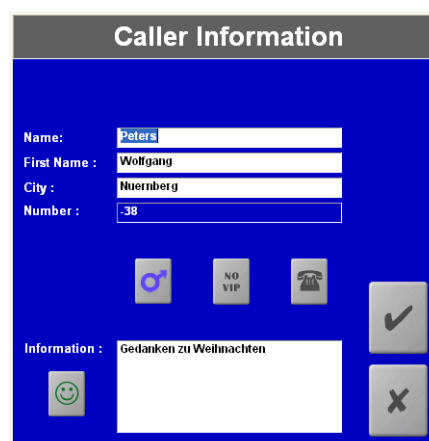
With  (EDIT) it is possible to change the currently displayed data record.

The  (DELETE) key cancels the currently displayed data record. Be careful, there will be no pre-confirmation whether the data record is definitely to be deleted!

The  (EXTERN 2 = 2nd prefix number) key is only displayed if a 2nd. prefix number was entered in *S₀ Line* → **Prefix Numbers**. The **Name** displayed on the button can be changed.

After pressing the  or the  button, the dialog for entering **caller information** opens.

FIG. 24 DIALOG FOR ENTERING CALLER INFORMATION






Data about the caller can be entered in the **Name**, **First Name**, **City** and **Information** fields.



The telephone number can only be entered in the **Number** field if the number



was not transmitted by the system.



If the Telephone Hybrid is operated via a PABX, the **Prefix Numbers** (see CHAPTER 7.7.3.4.3, page 75) for internal calls can be suppressed via a minus character ('-'). To suppress the number the prefix number has to be entered including the '-' prefix (for example: If the number 130, '-130' must be entered).




The gender of the caller can be defined using the  (unknown),  (female) and  (male) button.

A caller can be defined as **VIP** by pressing either the  (no VIP) button or the  (VIP) button.

A caller can be blocked by pressing either the  (not blocked) button or by pressing the  (blocked) button. The duration of the lockage is automatically set for 1 year.



With the help of the **MAGIC SCREENER** database software, blocked callers can easily be managed. On one side different blocking periods can be set and on the other side, this blocking period is automatically checked. Therefore after the expiration of the blocking period the lockage is deleted.










In addition to the entry of Information or of the topic, the mood of the caller can be entered. The following entries are possible:  (friendly),  (neutral),  (unfriendly).

All entries are accepted and stored by pressing the  button.

By pressing  all changes and entries are deleted.


7.5.1.4.3

Further possibilities for establishing a connection


- (1) If you want to call a person on a certain line, you must only press one of the  (Pre Talk),  (Hold) or  (On Air) buttons of an available line in the **MAGIC TOUCH** main panel. Depending on the configuration, either the manual call dialog or the telephone book opens. The configuration of this optional function is made with **General** → **Miscellaneous Settings** → **Show dial dialog on disconnect** (see CHAPTER 7.7.3.1, page 58).
- (2) If one line is defined as a **VIP** line and if for this line, only one **VIP** is selected (see CHAPTER 7.7.3.5, page 76), the connection to this **VIP** is automatically established when either the  (Pre Talk),  (Hold) or  (On Air) button is pressed in the **MAGIC TOUCH** main panel.
- (3) If one line is preset for a call (name is displayed in the information field even if there is no connection), the connection to the preset caller can be established by pressing either the  (Pre Talk),  (Hold) or  (On Air) button of the line in the **MAGIC TOUCH** main panel
- (4) If there is only one defined information field for all caller lines (see Fig. 20, page 44) six quick dial keys are available in the **MAGIC TOUCH** main window for the direct calling.

7.5.1.5

Information

The detailed information area is only available if the display setting is configured accordingly. In **General** → **Display Settings** the **Information for each caller** option (see CHAPTER 7.7.3.1.6, page 66) must not be set. The  (Edit) key enables the displayed caller information (see Fig. 24, page 48) to be changed.

The display of the caller information in this presentation can be automated via **General** → **Display Settings** → **Show Information automatically** (see CHAPTER 7.7.3.1.6, page 66). If this option is set, the information on the caller whose mode has just been changed is displayed (e.g. when switching from Pre Talk to Hold) is always displayed.

Via the  (Info) button the information of each connected caller can be displayed at any time.

Also the display of the name and the telephone number is done with the help of the **Info** button. To display the name, it must have been previously entered into the telephone book database **and** the telephone number has to be transmitted from the caller's end.


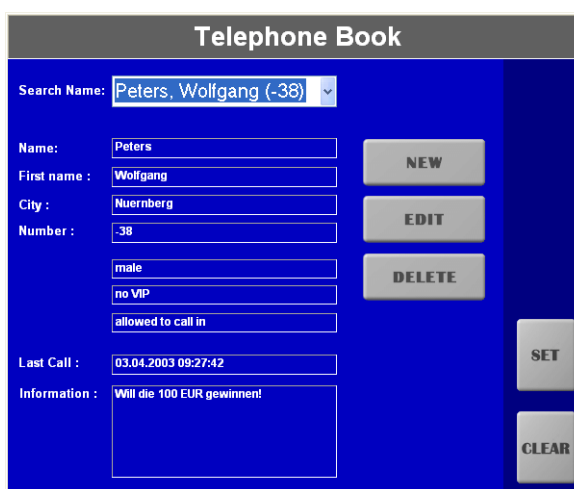





If there is **no** connection on a line, the line can be predefined for a call. Pressing  (Info) opens the extended telephone book dialog.

FIG. 25 TELEPHONE BOOK WITH LINE PREPARATION




As in the telephone book dialog a caller can be selected and be predefined for the line using the  (**SET**) button. The  (**CLEAR**) key deletes all presettings. After selecting the caller the name of the caller is displayed in the **Info** button.

The establishment of the connection is done by pressing one of the following buttons  (Pre Talk),  (Hold) or  (On Air).



The system tries to keep the predefined lines for incoming calls available as long as possible. These lines will be used only when no other line is available. The presettings will not be deleted however.

Additionally, beneath the info button, the temper  (friendly),  (neutral),  (unfriendly), age and gender  (male),  (female) of the caller are displayed.



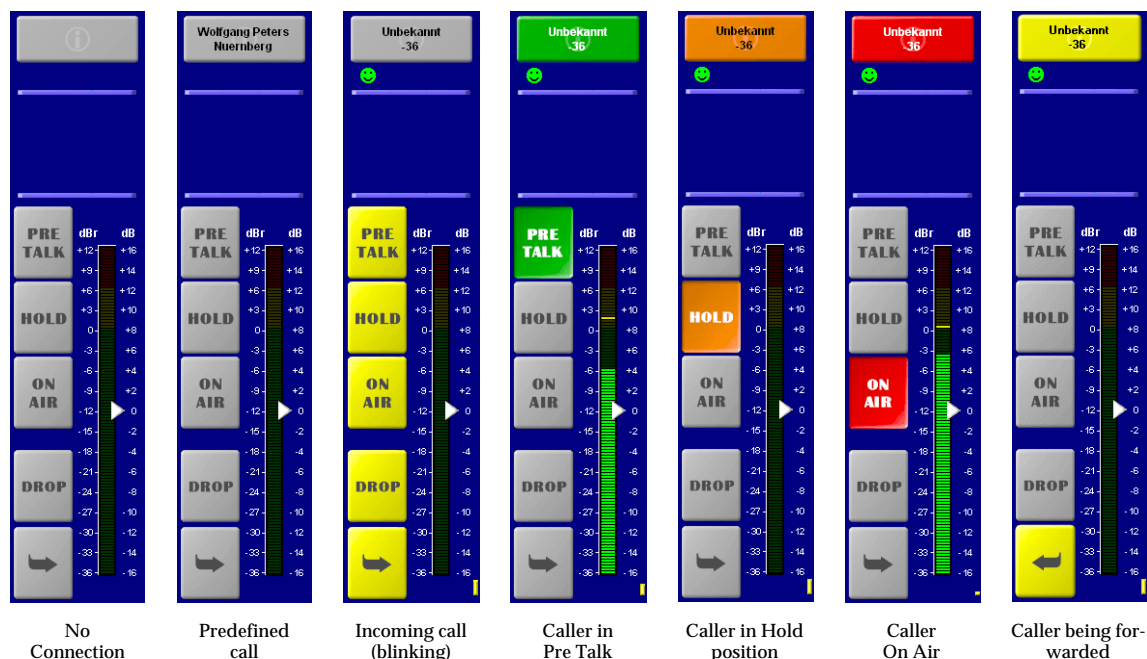
The entry and the indication of the age is only possible with help of the optional **MAGIC SCREENER** database software.

7.5.2

Line functions

The following figure shows the possible line modes:

FIG. 26 LINE FUNCTIONS AND MODE DISPLAY



Depending on the usage of the **MAGIC TOUCH LAN** or **MAGIC SCREENER** software options, single lines can be **highlighted in grey**. Then the **MAGIC TOUCH** user has no further access anymore to this line. Transfer point is always the **Hold** mode. It sets a line free.

7.5.2.1

Line functions without existing connection

If there is **no connection** the following functions are available:







- By pressing the **PRE TALK** (Pre Talk), the **HOLD** (Hold) or the **ON AIR** (On Air) button, either the manual call dialog or the telephone book opens depending on the configuration. The configuration of this optional function is done via **General → Miscellaneous Settings → Show dial dialog on disconnect** (see CHAPTER 7.7.3.1, page 58).
- With the help of the **ON AIR** information button, a line can be predefined for a call (see Fig. 25, page 50)

7.5.2.2

Line functions with existing connection or incoming call

If there is an **existing connection** or an **incoming call** the following functions are available:

- The **PRE TALK** (Pre Talk) key switches the caller in pre talk **PRE TALK**. This key is only available if a **Pre Talk** Audio interface was defined in **Audio Lines** (see CHAPTER 7.7.3.14, page 98).
- The **HOLD** (Hold) key puts the caller in the hold position **HOLD**. Now the caller hears the selected signal, defined in **Hold Signal Recording/Source → General Settings → Hold Signal Source** (see CHAPTER 7.7.3.10, page 87).

- The  (On Air) key switches the caller on air . The key is only available if an **On Air** Audio interface was defined in **Audio Lines** (see CHAPTER 7.7.3.14, page 98).
- The  (Drop) key drops the connection.
To avoid accidentally dropping of a connection, the **Drop** function can be configured in the **General Settings** → **Miscellaneous Settings** → **Press DROP button 1 second to hang up** submenu (see CHAPTER 7.7.3.1, page 58). Accordingly, the button must be pressed for 1 second before the connection is dropped.
- The  (= Call Forwarding) key forwards the caller to one of the call forwarding targets (see CHAPTER 7.5.1.3, page 45).
If the caller has already been forwarded, he can be recalled by pressing . Then the caller is automatically again in the **Hold** position and is available for all functions. The call forwarding function is only available if it has been activated in **S₀ Line** → **Call Forwarding** → **Enable Call Forwarding** (see CHAPTER 7.7.3.4, page 73).
- If the display with only one caller information field is chosen the  (Info) key updates the field. If the display with an information field for each caller is chosen, the information button opens the dialog for entering the caller information (see CHAPTER Fig. 24, page 48).
Via the **Info** button, the caller's name and telephone number are displayed. It is assumed that the caller has already been entered into the Telephone Book Database **and** the telephone number has been transmitted from the caller's end.



Via the optional **MAGIC SCREENER** database software, the location of the caller can be displayed instead of the telephone number. The configuration is made in the **General** → **Display Settings** → **Display City instead of telephone number** submenu (see CHAPTER 7.7.3.1.6, page 66).

7.5.2.3

Level Meter Display

The level meter display (see Fig. 20, page 44) shows the Audio level of the caller between the range of -36 ... +12dBr. The resulting absolute level adjusts the level setting in **Audio Level** → **Master** and **Slave**. For example: incoming level = -15dBr, set Audio Level Out = +6dBu. At this moment it sets an absolute output level of -9dBu. The headroom in the system is always 6dB.

7.5.2.4

Level setting

The Audio signal of the caller can be reduced or increased between the range of -16dB... +16dB. The level setting (see Fig. 20, page 44) can, **during an existing connection**, either be dragged to the desired position or it can be put to the desired position by clicking. After dropping the connection the level setting is set back to 0dB.



The level adjustment can only be used if the **AGC** (Automatic Gain Control) for this line has been **turned off** (see CHAPTER 7.7.3.11, page 89).

7.5.2.5

Time information

There are two optional timer available to indicate how long a caller has been in the connection mode:


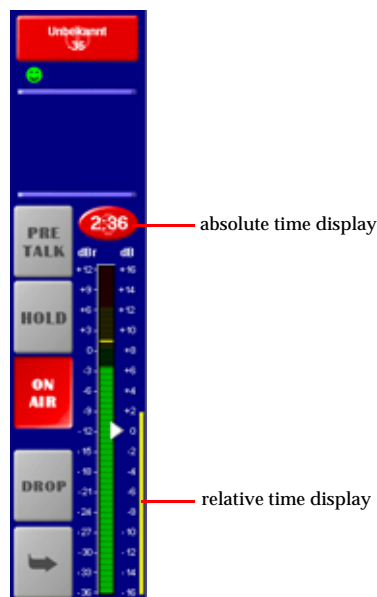
- The absolute time display , shows the duration of the condition in minutes and seconds (or just in seconds). The configuration of the absolute time display is done in **General** → **Time related settings** → **Show time symbol** (see CHAPTER 7.7.3.1, page 58).
- The relative time display represented as a time bar shows at first sight, which caller has been the longest time in the connection mode. If one time beam reaches the maximum height all other time beams are automatically scaled down. The configuration of the relative time display is made in **General** → **Time related settings** → **Show Time Beam** (see CHAPTER 7.7.3.1, page 58).

FIG. 27 ABSOLUTE AND RELATIVE TIME DISPLAY



If the **General** → **Time related settings** → **Reset time on Audio Line change** option (see CHAPTER 7.7.3.1, page 58) is not set, the time beam is displayed in yellow. Otherwise the time beam is the colour of the line mode (e.g. red for **On Air**)

7.6

Menu File → Exit

Selecting the ***File*** → ***Exit*** menu completes the application.

7.7

Configuration Menu

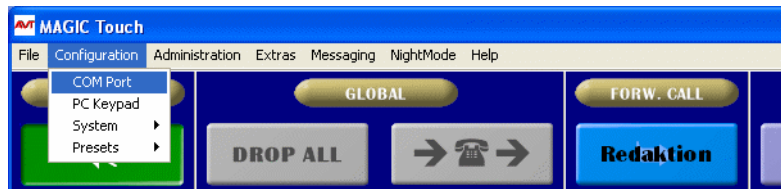
All essential settings of the systems are set in the **Configuration** menu. The detailed description follows now.

7.7.1

COM Port Submenu

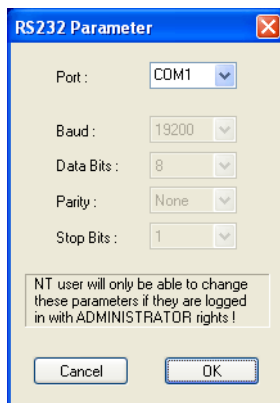
The **COM Port** submenu supports the setting of the RS232 interface parameter.

FIG. 28 MENU CONFIGURATION → COM PORT



Set on your PC the **Port** to which the system is connected. All other parameters, such as the baud rate, cannot be changed. After pressing the **OK** button, the settings are accepted. The **Cancel** button deletes all settings.

FIG. 29 COM PORT

**Windows NT4.0/2000/XP User**

The setting of the COM port can only be made when logged on as an Administrator when using Windows NT/2000/XP. The setting can be changed, but it will not be accepted.

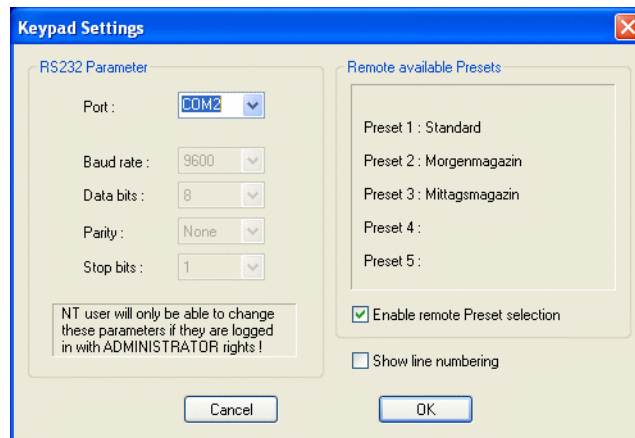
Always log on as an administrator to configure the system.

7.7.2

PC Keypad Submenu

Besides the operation with a touchscreen or with a mouse, the optional **MAGIC Hybrid Keypad PC** (see CHAPTER 8, page 125) can also be used. The configuration of the keypad is done in **Configuration** → **PC Keypad**.

FIG. 30 KEYPAD SETTINGS



With this panel, set the **Port** on your PC via **RS232 Parameter**, to which the **MAGIC Hybrid Keypad PC** is connected. All other parameters such as baud rate cannot be changed.

**Windows NT4.0/2000/XP User**

The setting of the COM port can only be made when logged on as an administrator when using Windows NT/2000/XP. The setting can be changed, but it will not be accepted.

Always log on as an administrator to configure the system.

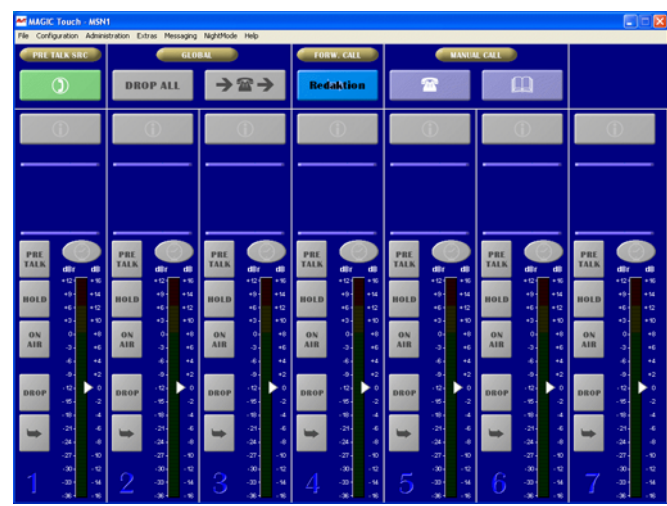
Via **Remote available Presets**, a maximum of five **Presets** (see CHAPTER 7.7.4, page 107) are displayed. These presets can be selected via the keypad. Set the **Enable remote Preset selection** option to activate the function.

To get a better orientation between keypad and screen, a numbering of the lines can be displayed on the screen. For this, set the option **Show Line Numbering**.

After pressing the **OK** button all settings are accepted.

The **Cancel** key deletes all settings.

FIG. 31 MAGIC TOUCH DISPLAY WITH LINE NUMBERING

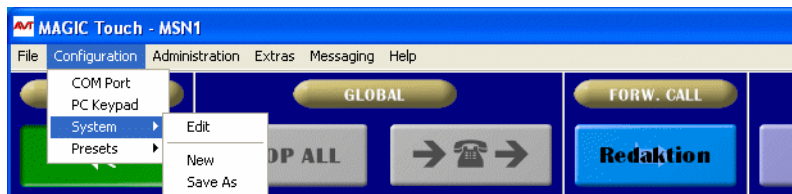


7.7.3

System Submenu

The system configuration is arranged on different links according to functionality. For most functions at least two Audio interfaces are assumed (e.g. Pre Talk and On Air). For special possibilities or when using the digital Audio inputs/outputs the **AES/EBU/ANALOGUE Module** is required.

FIG. 32 MENU CONFIGURATION → SYSTEM



The current configuration can be edited with **Configuration → System → Edit**.

To generate a new configuration select **Configuration → System → New**. New names can be entered for a new configuration in the **Preset Name** panel.

FIG. 33 PRESET NAME PANEL



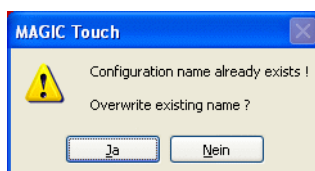
After pressing the **OK** button the new configuration is generated. All current settings are now accepted as a basis for the new configuration. Subsequently, the system configuration opens automatically.

The **Cancel** button closes the panel without generating a new configuration.

To store an existing configuration under a new name select **Configuration → System → Save As**. The **Preset Name** panel also displays. The new name for the current configuration can now be entered.

If a name already exists for a configuration a note is displayed. In case you want to overwrite the name, confirm the question by answering **Yes**. **No** cancels the input.

FIG. 34 NOTE ABOUT AN ALREADY EXISTING PRESET NAME



7.7.3.1

General

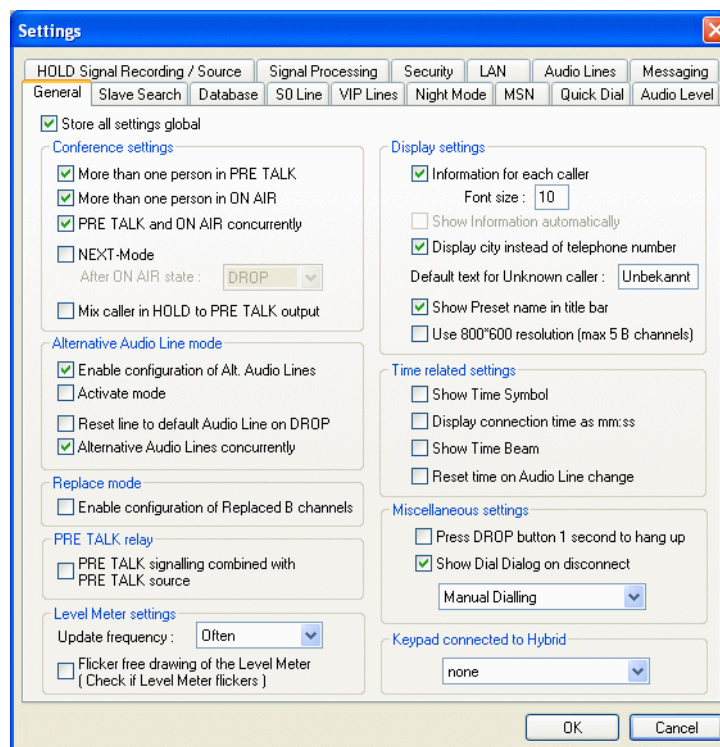
Most configuration settings are stored in Windows the **Registry**. The configuration can be available either for all users (key name: HKEY_LOCAL_MACHINE) of the computer or only for the current user (key

name: HKEY_CURRENT_USER). It is recommended that one configuration is stored for all users to keep the effort at the beginning of the operation as low as possible. The configuration can be stored with the help of the **Store all settings global** option.

After pressing the **OK** button all settings are accepted.

The **Cancel** key deletes all made settings.

FIG. 35 INDEX CARD GENERAL SETTINGS



7.7.3.1.1 Conference Settings

If there is more than one connection, the performance of the system can be influenced with the help of the conference settings.

The **More than one person in PRE TALK** option provides the possibility to talk to all callers in the **Pre Talk** mode simultaneously. The signals of all callers are digitally mixed in the system and the mixed signal is transmitted to the **Pre Talk** Audio interface. Also, a digital **N-1** signal is generated for each caller. If this option is not set, only one caller can be in the **Pre Talk** mode. If a second caller is put into the **Pre Talk** mode, the first caller is automatically switched into the **Hold** mode.

The **More than one person in ON AIR** option enables a simultaneous **On Air** conference with all callers who are in the **On Air** mode. The signals of all callers are digitally mixed in the system and the mixed signal is transmitted to the **On Air** Audio interface. Also, a digital **N-1** signal is generated for each caller. If this option is not set, only one caller can be in the **On Air** mode. If a second caller is put in the **On Air** mode the first caller is automatically switched into the **Hold** mode.

To ensure that one or several callers can be in the **Pre Talk** mode as well as in the **On Air** mode, the **PRE TALK and ON AIR concurrently** option must be active. If this function is not active, several callers can either be in **Pre Talk** or

be **On Air**. If for example, three callers are in the **Pre Talk** mode and one of them is switched into the **On Air** mode, then the other two are automatically put into the **Hold** mode.

The **Next-Mode** was especially implemented for game shows. This provides the possibility of putting the callers on **Hold** immediately without a Pre Talk. By pressing the **NEXT** (Next) button on the **MAGIC TOUCH** user interface the caller who has been waiting the longest time in the system is automatically put **On Air**. By pressing the operating key **NEXT** (Next) once again the next caller is put **On Air**.

FIG. 36 NEXT MODE



What happens to the previous caller is defined by the **After ON AIR state** option. Selecting **DROP** drops the connection, **PRE TALK** puts the caller in the **Pre Talk** mode and **HOLD** puts the caller in the **Hold** mode. To mark that a caller is already **On Air**, the **Pre Talk** and **Hold** mode are highlighted with a red font.



Of course, at any time each caller can be put manually in the **On Air** mode or into another mode. All functions are available as usual.

If the **Mix caller in HOLD to PRE TALK output** option is active, the signal of the caller in the **Hold** mode is mixed together with the signal of the caller in the **Pre Talk** and the common signal is transmitted to the **Pre Talk** Audio interface. This function is quite useful for recognising that a caller wants to say something but no extra **Hold** Audio interface was defined (see CHAPTER 7.7.3.14, page 98).

7.7.3.1.2

Alternative Audio Line Mode

So far, only the **Pre Talk**, perhaps the **Hold** and the **On Air** Audio interfaces were used. Additionally all callers **On Air** or in the **Pre Talk** mode were automatically mixed in the system. If it is desired to put several callers **On Air** or to use several **Pre Talk** Audio interfaces - **without mixing them**- the alternative Audio Line Mode can be used. Depending on the construction of the system up to **four alternative On Air** and up to **six alternative Pre Talk** Audio interfaces are possible.

The release of this operating mode is done by the **Enable Configuration of Alt. Audio Lines** option. Therefore, at first, there are four alternative Lines available for **On Air** and **Pre Talk** for the configuration of the Audio interfaces (see

CHAPTER 7.7.3.14, page 98).

To select and activate configured **alternative On Air Lines** on the **MAGIC TOUCH** user interface the **Activate Mode** option has additionally to be set. The activation of **alternative Pre Talk** Audio interfaces can only be done via **MAGIC TOUCH LAN** or **MAGIC SCREENER** applications.



Keep in mind that the **Pre Talk**, **Hold** and **On Air** Audio interfaces can still be used if they are configured.

Therefore the maximum build provides a total of **twelve**¹ different Audio interfaces for the **MAGIC TOUCH** user interfaces.

¹ Until release 3.0 a maximum of only seven Audio interfaces are available.

If the **Reset Line to Default Audio Line on DROP** option is active the line is automatically switched to the default **On Air** Audio interface after the **establishment of the connection**. This does not depend on the selection of the **alternative On Air Line**. The standard Audio interface is the **On Air** Audio interface, if defined. Otherwise it is the defined **alternative On Air Line** with the smallest index (e.g. Alternative On Air Line 1). If the option is not set, the setting of the Audio interface is kept after the connection is dropped.

Normally, the **alternative On Air Lines** are only used if no conference between callers is desired. However, if several lines with the same **alternative On Air Line** are used, a conference between the callers of the same **alternative On Air Line** can be set up.



This function also effects the **alternative Pre Talk Lines**, which can be used by **MAGIC TOUCH LAN** or by **MAGIC SCREENER**.

For this set the **Alternative Audio Lines concurrently** option. Therefore with the maximum construction one **On Air**, four **Alternative On Air** and one **Pre Talk** conference can be implemented simultaneously on the **MAGIC TOUCH** user interface.

If this option is not used always only one caller can be on the **alternative Line**. Callers who have the same index (e.g. alternative Line 1) are automatically put on **Hold**.

The selection of the **alternative Line** in use is done by a long pressing (approx. 1-2 seconds) of one of the keys **Pre Talk**, **Hold** or **On Air** or **Alternative 1...4** on the **MAGIC Touch** surface.

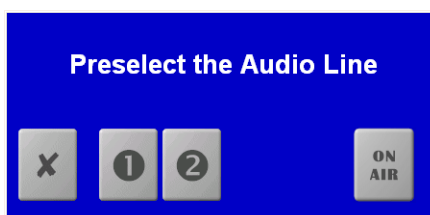



If there is an existing connection, only the button with the active mode can be pressed to avoid an accidental switch over (see Fig. 38, page 62).

If there is no connection, any button can be pressed.






When operating with the mouse press the left mouse button. The **Preselect the Audio Line** dialog for the preselection of the **alternative On Air** Audio interface opens.

FIG. 37 DIALOG TO PRESELECT THE ON AIR AUDIO INTERFACE



By pressing the  button the dialog closes without change.

The selection of the desired Audio interface is done by pressing one of the following keys

-  (Alternative On Air Line 1)
-  (Alternative On Air Line 2)
-  (Alternative On Air Line 3)
-  (Alternative On Air Line 4)
-  (On Air).

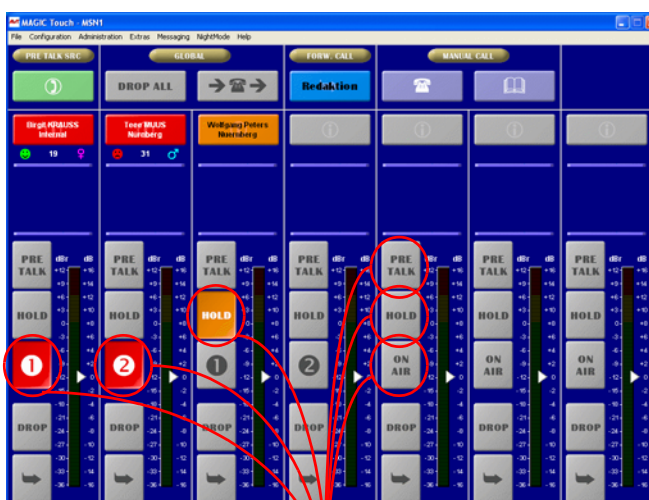


This dialog shows only the keys which were defined when configuring the Audio interfaces (see CHAPTER 7.7.3.14, page 98).

The **alternative On Air** Line can be selected any time, even during an existing connection.

See Fig. 38 as an example for the use of alternative lines. During the show, two players are playing against each other. They operate the computer game via DTMF tones. To allocate the tones very clearly, both callers are put on separate Audio interfaces. Lines 3 and 4 are already prepared as alternatives to Lines 1 and 2. If a further caller on Line 3 is switched to the alternative Line 1 a conference between line 1 and line 3 would be possible (if **Alternative Lines concurrently** option has been set).

FIG. 38 ACTIVATION FOR SELECTING ALTERNATIVE LINES



Long pressing opens
the dialog to preselect the
Audio interface

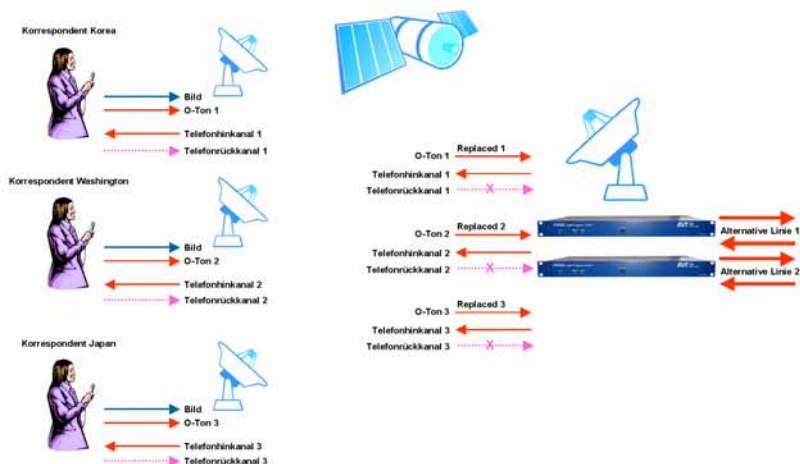


7.7.3.1.3

Replace Mode

The **Replace Mode** option was integrated especially for the operation of the Telephone Hybrid system as a command device. For example (see Fig. 39) the high quality image and high quality sound are transmitted via satellite to the studio. The command line is provided to the correspondent via a normal telephone.

FIG. 39 APPLICATION FOR THE REPLACE MODE



To use the advantages of the Hybrid system the incoming signal of the satellite is fed by the correspondent via an Audio interface, to the Hybrid (**Replaced**x). Via the Telephone Hybrid a default connection is established to the correspondent. Now the system replaces the telephone back channel via the **Replaced** line. The command line (channel to the telephone) will not be changed. It is now possible to have any conference in the studio with several correspondents. Several **alternative Lines**, as well as the **Hold** and **On Air** Lines, can be defined as Audio interfaces to the mixer.

All functions of the Hybrid are available. A correspondent can even be transferred to an optional telephone.



In total a maximum of 12 **Replaced Lines** and **Hold/On Air/Alternative Lines** is possible since the system provides within the complete build, a total of **twelve**¹ Audio interfaces. A **Pre Talk** Audio interface can not be defined because it does not make any sense considering the operating technique.

¹ Until release 3.0 a maximum of only seven Audio interfaces are available.

If the **Replace Mode** → **Enable configuration of Replaced B channels** option is active the Audio interfaces in **Audio Lines** → **Audio Input/Output Interface Assignment** (see CHAPTER 7.7.3.14.2, page 99) can be defined as **Replace B channel Line 1...12**. This option defines which line (B channel) is replaced by which Audio interface. For a better identification the associated **Input** is indicated in the index.


Additionally, the **MAGIC TOUCH** user interface displays a symbol on the particular line (e.g.  for input 1) with the relevant Audio input interface (see Fig. 40).

FIG. 40 DISPLAY OF THE AUDIO INPUT INTERFACE ON THE USER INTERFACE

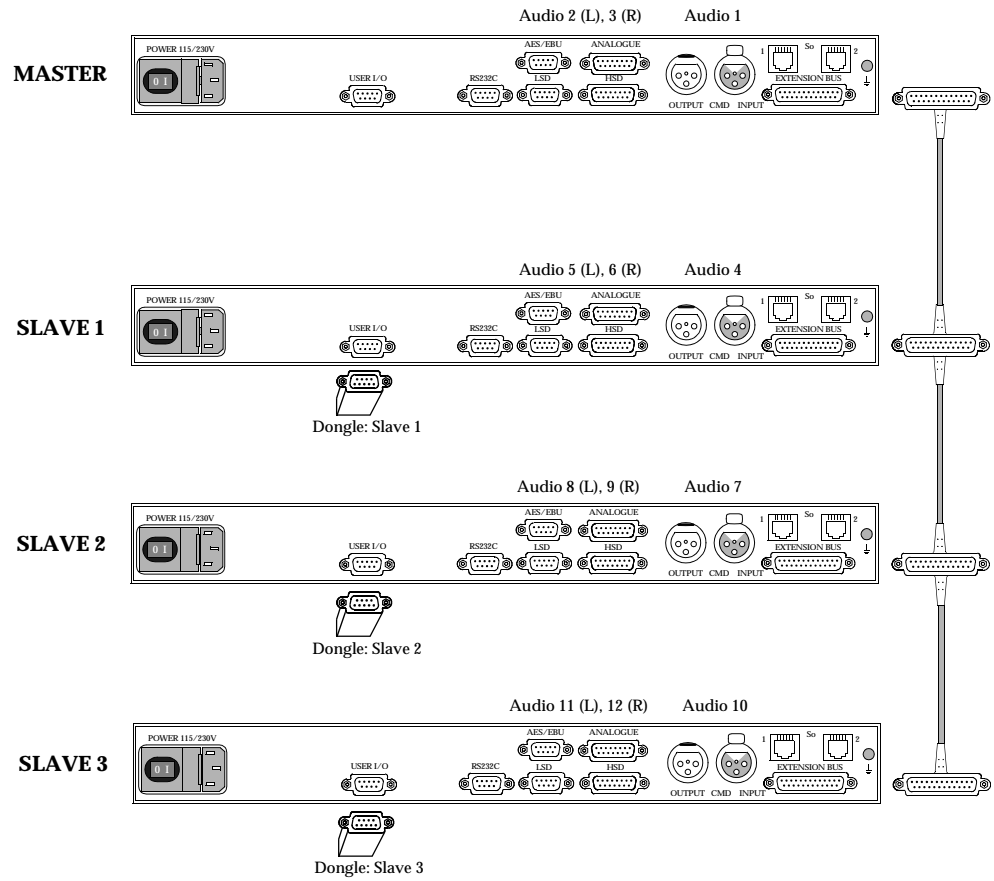
selected Audio
input interface



The numbering of the interfaces of the Hybrid system is assigned as follows:

Input	System Audio Interface
1	Master: Analogue Audio (Standard Audio interface)
2	Master: AES/EBU/ANALOGUE Module left
3	Master: AES/EBU/ANALOGUE Module right
4	Slave 1: Analogue Audio (Standard Audio interface)
5	Slave 1: AES/EBU/ANALOGUE Module left
6	Slave 1: AES/EBU/ANALOGUE Module right
7	Slave 2: Analogue Audio (Standard Audio interface)
8	Slave 2: AES/EBU/ANALOGUE Module left
9	Slave 2: AES/EBU/ANALOGUE Module right
10	Slave 3: Analogue Audio (Default Audio interface)
11	Slave 3: AES/EBU/ANALOGUE Module left
12	Slave 3: AES/EBU/ANALOGUE Module right

FIG. 41 SYSTEM AND AUDIO INTERFACE ASSIGNMENT



7.7.3.1.4 PRE TALK Relay

The **Pre Talk** mode is automatically signalled via the **Pre Talk Relay** and can be used to switch a mixer automatically if the programme presenter switches a caller into **Pre Talk**. When automating the **Pre Talk Source** (see CHAPTER 7.7.3.13, page 95) the **Pre Talk Relay** will also switch the mixer, even though only the pre talk source is in Pre Talk via the handset with the caller. With the help of the **Pre Talk Relay → Pre Talk Signalling combined with Pre Talk Source** option the switchover of the mixer is only made if the presenter uses the **Pre Talk** Audio interface and not the handset.



Do not forget to set the **Audio Line** → **PRE TALK** assignment, in the **Relay** submenu (see CHAPTER 7.7.3.15, page 102) at least for one relay, to ensure that a **Pre Talk Relay** exists.

7.7.3.1.5 Level Meter Settings

The setting of the **Level Meter Setting** (see Fig. 20) enables to adjust the update interval of the display if PCs with a lower performance are used. If very slow PCs (< 100 MHz) are used, select **Seldom**, when using PCs between 100...300 MHz set **Moderate** and for faster PCs > 300 MHz set **Often**.

The ***Flicker Free Drawing of the Level Meter*** option must only be set, if the **Level Meter Setting** flickers a lot on your screen.

7.7.3.1.6 Display Settings

The **MAGIC TOUCH** user interface permits two different presentations: If the **Information for each caller** option is not active, only one detailed information field for all callers (see Fig. 42) is displayed. In this kind of presentation, the display can be automatised if the **Show Information automatically** option is set. Therefore, always, the information on the caller whose mode has been changed (e.g. when switching from **Pre Talk** to **Hold**) is shown.

FIG. 42 **OPTION "INFORMATION FOR EACH CALLER" NOT SET**



If the **Information for each caller** option is active, an information field for each caller is displayed (see Fig. 43).

The **Font Size** setting enables the size of the the information field font to be adjusted.



The font size is individually stored for each setting of the number of visible B channels (***Number of B Channels visible***) (see CHAPTER 7.7.3.4.1, page 73).

FIG. 43 "INFORMATION FOR EACH CALLER" OPTION SET



If optional **MAGIC SCREENER** data base software is available, the location of the caller can be displayed instead of the calling number. To do this, set the x **Display City instead of telephone number** setting.



Note that the **MAGIC SCREENER** database software has to be configured accordingly.

With the help of the **Default Text for Unknown Caller** option, individual text can be entered. This text is then displayed in the **Info** field of the **MAGIC TOUCH** user interface, in the case that the number of the caller is not known and no database entry is available.

The system allows a system configuration via **Presets**. Select the **Show Preset name in title bar** option to display in the head bar of the application, which **Preset** is currently active.

The **MAGIC TOUCH** user interface was especially developed for a resolution of 1024 x 768 pixels. It is displayed at its best at a 15" screen. For smaller screens (e.g. 12") with 800 x 600 pixels, the display of the **MAGIC TOUCH** screen can be adjusted by activating the **Use 800 x 600 resolution (max. 5 B channels)** option. When starting, the software automatically recognises the Windows screen resolution.




With a resolution of 800 x 600 pixels a maximum of **five** lines can be displayed.

7.7.3.1.7

Time related settings

On the **MAGIC TOUCH** user interface, two optional timers are available:

- The absolute time display  shows the duration of the mode in minutes and seconds or only in seconds. The **Show Time Symbol** option activates it.
If the display of the time is in minutes and seconds and not only in seconds, the **Display connection time as mm:ss** option must be set.
- The relative time display in the form of a time beam shows at first sight, which caller has been connected the longest time. If a time beam reaches the maximum height, all other time beams automatically scaled down. The configuration of the relative time display is done by activating **Show Time Beam** (see Fig. 27).

Both time displays can be set back to zero when changing the line mode (e.g. when switching from **Hold** to **On Air**). Select the **Reset time on Audio Line**


change option for this.






If the **Reset time on Audio Line change** option (see CHAPTER 7.7.3.1, page 58) is not set, the time beam is displayed in yellow. Otherwise the time beam is displayed in the colour of the line mode (e.g. red for **On Air**)

7.7.3.1.8

Miscellaneous Settings

To avoid accidentally dropping a connection by pressing the  (Drop) button, it is possible to set the **Press DROP button 1 second to hang up** option. If this option is selected, the  (Drop) button has to be pressed at least for 1 second.

If there is no connection on a caller line the manual dial dialog or telephone book can be opened by pressing one of the keys  (Pre Talk),  (Hold) or  (On Air). Option **Show Dial Dialog on disconnect** activates this function. Select the according dialling dialog **Manual Dialling** for manual call or **Telephone Book** call using telephone book.



To select **Telephone Book** the database support must be active (see CHAPTER 7.7.3.3, page 70).

7.7.3.1.9

Keypad connected to Hybrid

As redundancy purposes the Hybrid system can be connected to a **MAGIC Hybrid Keypad 4/7/12** in parallel to the **MAGIC TOUCH** software. Therefore, the operation is assured if the PC fails.

Via **Keypad connected to Hybrid**, set the keypad that has been connected. The following settings are possible:

- **none**: no keypad is connected.
- **MAGIC Keypad 4**
- **MAGIC Keypad 7**
- **MAGIC Keypad 12**
- **other**: for future extensions.

7.7.3.2 Slave Search

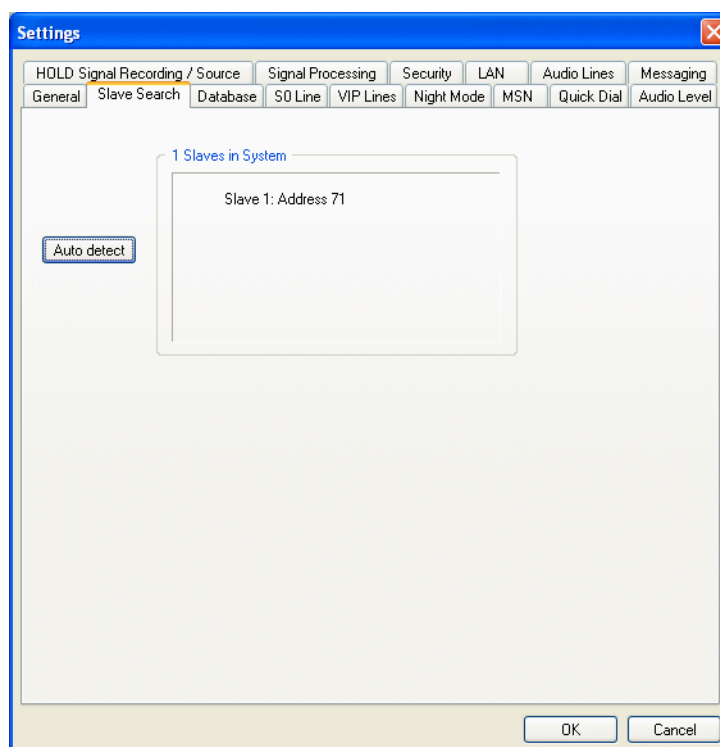
If several systems are connected to each other via the **Extension Bus**, these systems must be installed by the software **when operating for the first time**. This is done via the link **Slave Search**.

Press the **Auto detect** button to start the search. After a couple of seconds all slave systems (maximum three) should be listed. The Master system is not displayed. The displayed address is only relevant for internal use.



If one system is lacking, even though it has been connected and turned on, check if all Dongles have been properly connected (see Fig. 11 and Fig. 12)

FIG. 44 SEARCH OF THE SYSTEMS ON THE BUS



After pressing the **OK** button all settings are accepted.

The **Cancel** key deletes the settings.

7.7.3.3

Database settings

**Windows NT4.0/2000/XP**

When using Windows NT/2000/XP all necessary files for the use of the database support are part of the operating system.

All other Windows operating systems need the database software MS[®] Access 2000 or the optional **MAGIC SCREENER** database software which contains a Runtime Version of MS[®] Access 2000.

Function of the database

All **MAGIC TOUCH**, **MAGIC TOUCH LAN** and **MAGIC SCREENER** software modules always use the same **Caller.MDB** database file (the so called **Back End data base**) to switch caller data among callers. The file can be installed on any PC on the network. This PC as well as the index where the database file is installed, must be available via the network for all application computers on the network. The second necessary file **Screeener.MDW** administers the access to the database. This file can be on the same path as well as the database file.

**To share a folder in the network (Windows XP)**

Open the Windows Explorer and then locate the folder you want to share.

Right-click the folder, and then click sharing and security.

If the **Share this folder in the network** check box is available, select it.

If the **Share this folder in the network** check box is not available, the PC is not connected to the network. To install a network, click on the **network installation assistant** link and follow the instructions to activate file sharing. As soon as the sharing is active, start the procedure again.

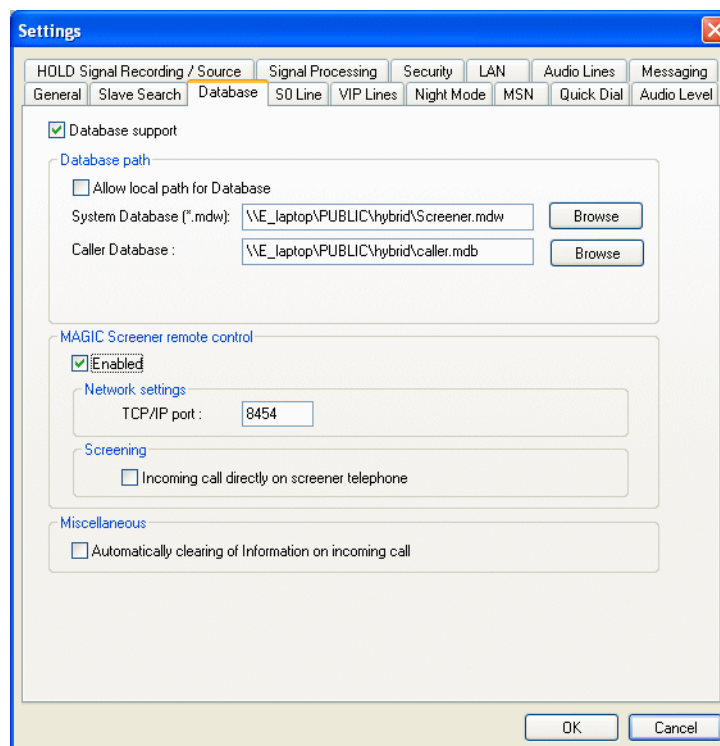
To change the name of shared the folder or drive, type a new name in **shared name**. The new name is what users will see when they connect to this shared folder. The actual name of the folder does not change.

Activate the **network user allowed to share files** check box to permit other users to access files in the shared folder.

The **MAGIC TOUCH**, **MAGIC TOUCH LAN** or **MAGIC SCREENER** application represents the **Front End database**. This application enables access to the Back End. The entered path of the **MAGIC TOUCH** is very important to ensure that during the show, all applications work with the same Back End database file. Both, **MAGIC TOUCH LAN** and **MAGIC SCREENER** automatically receive the correct path of the currently set Back End database file.

Configuration of the database

FIG. 45 CONFIGURATION OF THE DATABASE ACCESS



The database support is activated by the **Data base support** option.

After pressing the **OK** button, the settings are accepted.

The **Cancel** key deletes the settings.

7.7.3.3.1 Database path

Enter the paths of the necessary database files in **Database path**.

If the path of the files can be indicated via a letter of a drive (e.g. S:\Program\MAGIC TOUCH\Caller.mdb) set the **Allow local path for Data base** option.



When indicating the letter of the drive ensure that all computers of the network use the same letter of the drive for the database index.

If this option is not active, the selection of **UNC path** (Universal Naming Convention) must be set.



An **UNC path** can be recognised with its two prefixed „\\“. If your database was installed in the network search for the correct path. Best possibility is to use the **Browse** function and to select **network environment**. If the **MAGIC TOUCH** user interface and the database file **Caller.MDB** were installed on the same computer this procedure must be done.

In **System Database (*.mdw)** enter the path of the relevant **Screener.MDW** file. This file can be stored in the same directory as the **Caller Database** that has the name **Caller.MDB** in the in the delivery mode. The name of the **Caller.MDB** file can be copied and changed¹ at any time.

The structure of the directory can be browsed via the **Browse** button.

7.7.3.3.2 **MAGIC SCREENER remote control**

If it is desired to use the database supported **MAGIC SCREENER** software in the network, the **Enabled** option must be first activated.

The provided **TCP/IP Port** in **Network settings** has the default setting **8454**. Normally a change is not necessary.



However, if a port change, keep in mind that it is imperative that all **MAGIC SCREENER** database applications have to be adjusted accordingly.

The **Screening → Incoming call directly on screener telephone** option must only be active if the telephone call and the screening are realised via a separate telephone. **The caller has to call this telephone directly** and for the screening, the optional **MAGIC SCREENER** screening software must be in use. In this case, the caller data can be entered into the database as usual. If the caller is to be screened, the **SCREEN** button of the **MAGIC SCREENER** software must be pressed. Thereby the caller's information is transmitted to the **MAGIC TOUCH** software. Afterwards, the screened caller is forwarded to the Hybrid system by a normal call forwarding of the screener telephone. The Hybrid system recognises by the call forwarding number (that means that the screener telephone must transmit its own telephone number) the screened data record and displays it on the screen. More information can be found in the **MAGIC SCREENER** documentation.



Do not mistake this option not with **Pre Talk via call forwarding** (see CHAPTER 7.7.3.4.2, page 74). For that function the caller can call the Telephone Hybrid directly and is then transmitted through the system to a normal telephone for the Pre Talk. During this action the caller is kept within the Hybrid system.

7.7.3.3.3 **Miscellaneous**

With the help of the **Miscellaneous Settings → Automatically clearing of Information on incoming call** option, you can select if the info field will either be deleted (active) automatically if a caller calls again or if the field will be kept (non active).

¹The file Screener.MDW must not be named.

7.7.3.4 S₀ LineFIG. 46 S₀-LINE SETTINGS

After pressing the **OK** button, all settings are accepted.

The **Cancel** key deletes all settings.

7.7.3.4.1 General

The **Number of B Channels visible** parameter indicates how many lines will be displayed on the user interface. The allowed range is given in brackets.



In the case that only a maximum of 5 lines can be set, even though a Master and a Slave system is connected and only one call forwarding is installed, then the problem results from the screen resolution. The resolution is either limited to 800 x 600 pixels or the **Display Settings** → **Use 800 x 600 resolution** option (see CHAPTER 7.7.3.1.6, page 66) is active by accident.

In most cases, the presenter accepts a call manually. If it is desired for certain kind of shows that the Telephone Hybrid accepts the call automatically the **Auto Answer Call** option must be active. The callers are automatically put in the **Hold** mode.



If the **Next** mode is selected (see CHAPTER 7.7.3.1.1, page 59) the automatic call answer is generally active.

The **Suppress ISDN error message** option prevents the display of ISDN error

messages. Excepted are messages such as **busy**.



Normally this option should be active to avoid an irritating the presenter because of error messages. Especially PABXs tend to produce error messages which are not relevant for the operation.

However, when starting the operation these error messages can be quite useful to find the error.

7.7.3.4.2

Call Forwarding

A fundamental function of the Hybrid system is the possibility of call forwarding. The call forwarding is implemented in the system. Special PABX protocols are not used for this function. If a call is forwarded, the connection will be established to the call forwarding destination via a pre-defined B channel (see CHAPTER 7.5.1.3, page 45). In the system, the caller line will be connected internally to the line of the call forwarding target. Therefore, the caller remains in the system. This provides the possibility of returning the caller to the first line. During a call forwarding at least two B channels are used.

Set the **Enable Call Forwarding** option to activate the call forwarding.

The first channel for the call forwarding is set via **First B channel used for Call Forwarding**. For call forwarding the last channels of the system are always used.

The numbers of the call forwarding channels are fixed via the **Number** submenu.



The numbers in brackets show how many B channels can be used.

The required number of call forwarding channels depends on your application. E.g. for a 'Call-In' show where the audience is allowed to ask questions, two screening positions are scheduled. These screening positions enter the caller's data and provide it for the presenter. The screening is made directly by the Telephone Hybrid system (see CHAPTER 6, page 35). Accordingly, at least two call forwarding channels are essential. If the show host forwards the call e.g. to an editor after the talk, a third channel is necessary.

Via the **1st. telephone number for Call Forwarding** and **2nd. telephone number for Call Forwarding** submenu two call forwarding targets can be established.



If the Telephone Hybrid is operated through a PABX, the **Prefix Numbers** (see CHAPTER 7.7.3.4.3, page 75) can be suppressed for internal calls using a minus sign ('-'). For this function, the PABX telephone number must be entered with a prefix '-' (Example: the PABX 130 must be entered as '-130').

The **Name** that can be entered with each call forwarding is displayed by the **Forw. Call** key (see CHAPTER 7.5.1.3, page 45) of the **MAGIC TOUCH** user interface.





If no telephone number is entered the manual call dialog or the telephone book are opened automatically (depending on the **Miscellaneous Settings** (see CHAPTER 7.7.3.1.8, page 68). Therefore, a temporary call forwarding to any destination is possible.

This possibility is quite useful for the second call forwarding destination. To keep this function better in mind enter as name e.g. „manual“.

The **Advanced Call Forwarding mode over separate screener telephone** option

enables dialling via the Telephone Hybrid system when using a separate screening telephone.

Previously, a caller was forwarded e.g. to an editor to provide his address.

When using a screening application, where the screener uses either the **MAGIC TOUCH LAN** or the **MAGIC SCREENER** software, the screener must be able to forward the caller to his own telephone as well as to establish connections with this telephone. Here the screener will dial via the Hybrid to make sure that the caller is available in the Hybrid system. After setting this option, the call forwarding is displayed by a green arrow  instead of a grey one. If a screener wants to call a caller, he must press the call forwarding button. Depending on the configuration, either the telephone book or the manual dial dialog opens. After entering the telephone number and after the establishment of the connection by the  (= call forwarding) button, the screener's telephone rings first. If the receiver is off-hook, the connection to the desired caller established automatically. Now the caller can be handled as any other caller. If the screening telephone hangs up, the connection is dropped. Pressing the call forwarding button again puts the caller on **Hold**.

7.7.3.4.3 Prefix Numbers

Via **Prefix Numbers** (outside line) two prefix numbers **1st. external Prefix Number** and **2nd. external Prefix Number** can be set for the operation of the Telephone Hybrid system with a PABX. With the prefix number, the PABX offers the possibility of further outside line functions. The **Default** option defines which of the two prefix numbers will normally be used to establish a connection to an external partner when using the telephone book. For a **None-Default**-prefix number, a name can be entered. This name will be displayed in the telephone book when using a second prefix number.



In the manual call dialog (see CHAPTER 7.5.1.4.1, page 46) the prefix number must always be entered.

The **Skip Prefix Number on Incoming Call** option should only be set if the PABX prefixes the transmitted telephone number with the prefix number. The telephone number must be displayed in the same way as it is normally printed in the telephone book, that means [national dialling code] [city code] telephone number.

Example:	within a city:	5271130
	within a country:	09115271130
	from abroad:	00499115271130

7.7.3.5

VIP Line

The **VIP Lines** link provides the possibility of keeping one or several lines available for special callers. If a line must always be available e.g. during a game show to make external calls or to enable very important persons to call in, this line must be set as **VIP** line. This function also helps in the preparation for a show. The participants e.g. of a radio talk-show are previously defined and are assigned as **VIP** to the relevant line.



A calling **VIP** can only be recognised if his/her telephone number is transmitted. Make sure that the transmission of the **VIP**'s telephone number is active.

FIG. 47 VIP LINE SETTINGS

No.	Name	Number
1	Peters	-38



Please note that the central connection of the PABX can be occupied very quickly when making 'call in' actions. Even though the **VIP** lines are still available, **VIP** callers normally do not get through as well since they are rejected by the local exchange of the telecom because of the busy lines. In this case, a **VIP** only gets a connection to the Telephone Hybrid system if he calls the PABX extension directly and not the central number.

After pressing the **OK** button, all settings are accepted.

The **Cancel** key deletes all settings.

Enter in **Number of VIP Lines** the desired number of **VIP** lines. All available lines can be defined as **VIP** lines. If no **VIP** line will be used, enter the value **0**.

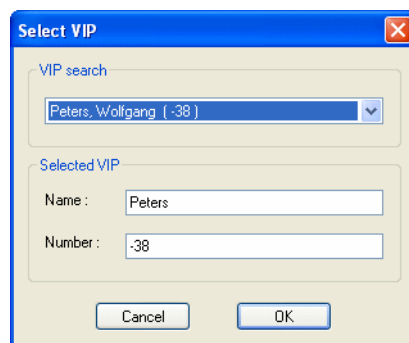
According to the defined number of **VIP** lines, entries are automatically added in the panel below.

If the **VIP**s are not changed and the **VIP** lines are displayed without names, all callers defined as **VIP** in the telephone book can call these lines or you can use these lines to do external calls.

To link a particular **VIP** to a line, select a **VIP** line and use the **Edit** button to open the panel for changing a **VIP** line.

Use the **Delete** key to cancel a selected entry.

FIG. 48 CHANGE OF A VIP LINE



With the help of **VIP search**, all callers defined as **VIP** in the telephone book can be displayed. Select the desired **VIP**. The selected **VIP** is displayed as **Selected VIP** with **Name** and **Number**.

If the desired **VIP** is not in the telephone book, simply enter the name (**Name**) and telephone number (**Number**) to define the VIP. Immediately, the entry is marked as **VIP** in the telephone book (see CHAPTER 7.5.1.4.2, page 47).

After pressing the **OK** button all settings are accepted.

The **Cancel** key deletes all settings.



If the Telephone Hybrid is operated through a PABX, the **Prefix Numbers** (see CHAPTER 7.7.3.4.3, page 75) can be suppressed for internal calls via a minus character ('-'). For this function the PABX telephone number must be entered with a prefix '-' (Example: the PABX 130 must be entered as '-130').

On the **MAGIC TOUCH** user interface the **VIP lines** are displayed in violet. If one line was defined for a **certain VIP**, this caller can be called directly by pressing either the **PRE TALK** (Pre Talk), **HOLD** (Hold) or **ON AIR** (On Air) key.

VIP connections are not dropped by pressing the **DROP ALL** (drop all callers) operating key (see CHAPTER 7.5.1.2, page 45).


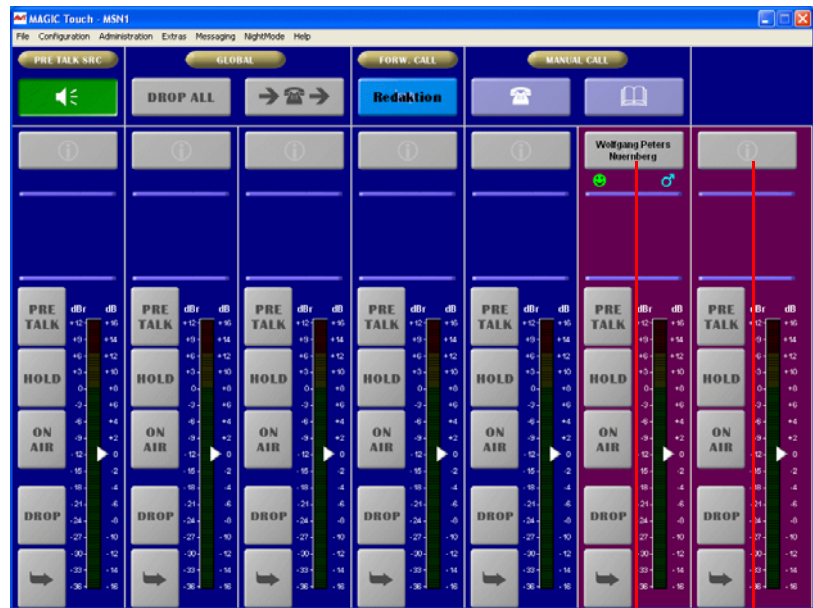
Even if the lock for callers  (see CHAPTER 7.5.1.2, page 45) on the Telephone Hybrid system has been activated, all **VIP** calls remain active.

FIG. 49

MAGIC TOUCH USER INTERFACE WITH VIP LINES



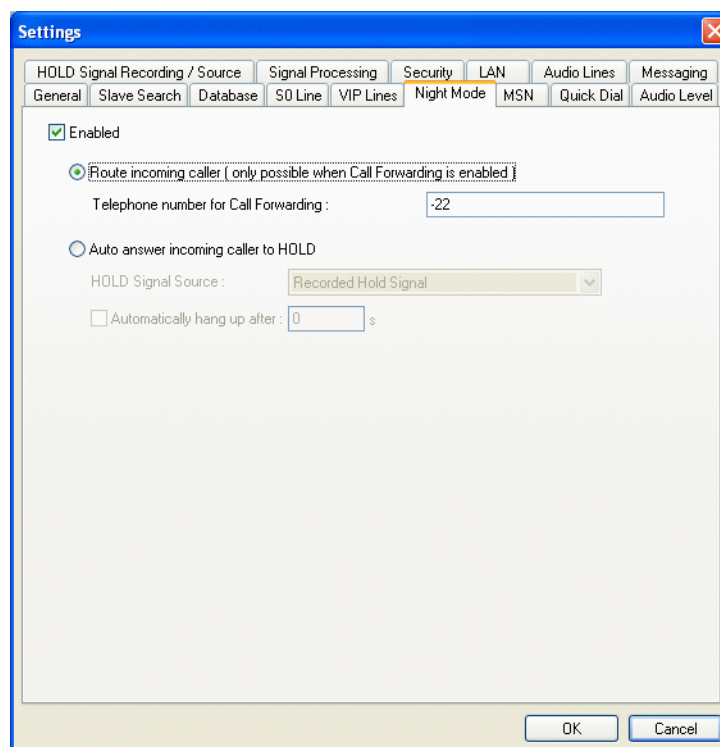
On this line
only the dis-
played caller
is allowed to
call in.

On this line
all callers
defined as
VIPs can call
in.

7.7.3.6 Night Mode

With the help of the **Night Mode** the behaviour of the system can be defined if the **MAGIC TOUCH** position is not manned. Therefore, it is assured that callers still reach a contact person or that at least the answering machine.

FIG. 50 CONFIGURATION OF THE NIGHT MODE



After pressing the **OK** button, all settings are accepted.

The **Cancel** key deletes all settings.

To activate the **Night Mode** set the **Enabled** option.

Callers can either be forwarded by the **Route incoming caller** selection or they are automatically put on **Hold** by **Auto answer incoming caller to Hold**.

When forwarding the call, the forwarding destination must be entered in **Telephone Number for Call Forwarding**. Please ensure that call forwarding is active (see CHAPTER 7.7.3.4.2, page 74).



If the Telephone Hybrid is operated through a PABX, the **Prefix Numbers** (see CHAPTER 7.7.3.4.3, page 75) can be suppressed for internal calls using a minus sign ('-'). For this function, the PABX telephone number must be entered with a prefix '-' (Example: the PABX 130 must be entered as '-130').

When selecting automatic call answer, the indication of the **Hold Signal Source** is additionally essential. Depending on the configuration of the Audio interfaces, a maximum of four different sources are available:

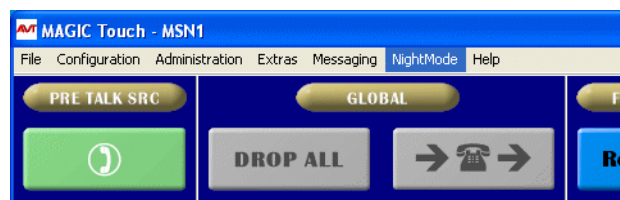
- **On Air**: the caller hears the Audio signal which is fed to the **On Air** interface (normally the programme).
- **Recorded Hold Signal**: the caller hears the Audio signal, max. of 8 seconds, stored in the system (see CHAPTER 7.7.3.10, page 87).

- **Master/Slave: AES/EBU/Analogue Module Left/Right:** the caller hears the Audio signal that is fed to the corresponding interface.
- **Dynamic Hold:** the caller hears the Audio signal that is assigned to the line. This is either the **On Air** signal or a signal of the **Alternative On Air Lines 1...4** (see CHAPTER 7.7.3.1.2, page 60).

If the system has to end the connection of a caller automatically after a certain time, the **Automatically hang up after N s** option must be active and the desired time must have been entered in seconds.

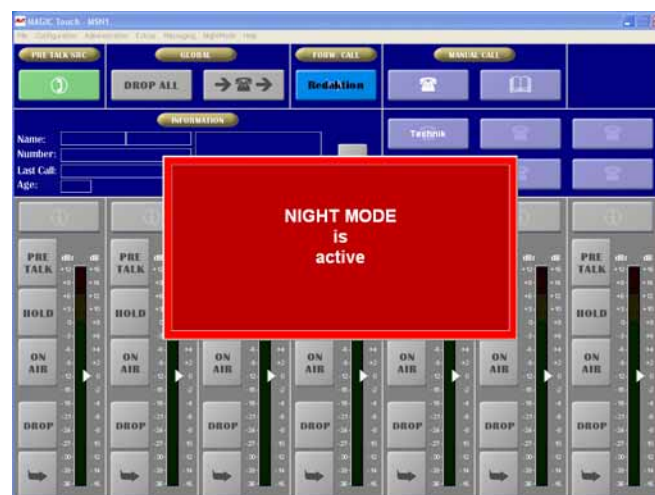
If the **Night Mode** is configured, the **Night Mode** menu is displayed on the menu bar of the **MAGIC TOUCH** user interface. Via this menu, the **Night Mode** is activated and deactivated.

FIG. 51 MENU NIGHT MODE



The active **Night Mode** is displayed on the **MAGIC TOUCH** user interface as shown below.

FIG. 52 ACTIVE NIGHT MODE



7.7.3.7

MSN

**MSN Usage**

An **MSN** (Multiple Subscriber Number) is used for addressing a particular unit on an ISDN Bus. This bus allows the operation of up to eight units in parallel.

If only one unit is connected, the entry of **MSN** is normally not necessary.

FIG. 53 MSN CONFIGURATION

After pressing the **OK** button all settings are accepted.

The **Cancel** key deletes all settings.

When **MSNs** must be used enter them in the **MSN-1** fields. For each S_0 connection, two **MSN** can be entered.

If your system consists of several partial systems all relevant links **Slave 1**, **Slave 2** and **Slave 3** are displayed. The **MSN** can be entered for these links.

7.7.3.7.1

Redundant system with MSN with block switching

The **MSN-2** field is intended for use in a redundant system. For security reasons, many radio stations have a second studio that is completely identical to the first one. In case of fault, calls can be switched immediately to the second studio. In general, the switching to another ISDN number is quite difficult, but the Hybrid offers the possibility of choosing another **MSN** Block via a TTL control signal.

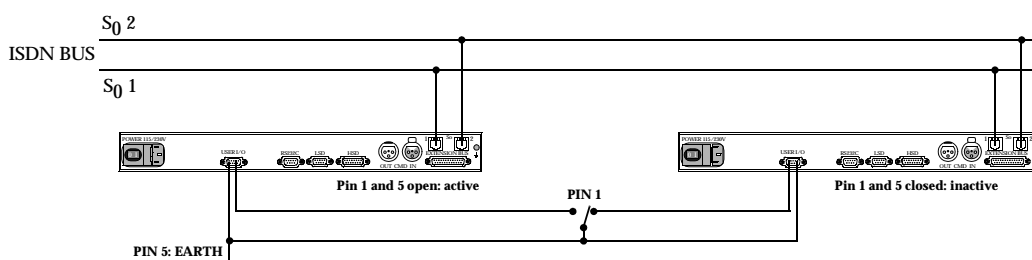
To activate the redundant system, set the **System redundancy** option.

For this principal, two Hybrids are operated on the same ISDN Bus. Therefore, without an **MSN** entry, both Hybrids would signal one caller. To always make sure that only one Hybrid is active, both systems must have a valid number in **MSN-1**. In **MSN-2**, enter an invalid number (e.g. 1111111) in both

systems. On both systems connect pin 1 and pin 5 of the **USER IO interface** as shown in Fig. 54. When switching over, one system now gets the valid **MSN-1** block and the other gets the invalid **MSN-2** block. Thus, always, only one system is active.

To recognise on the **MAGIC TOUCH** user interface which **MSN** is active, the name of the **MSN** block selected by the system, is displayed in the title bar of the main window. The names of the **MSN** blocks can be entered in the **MSN 1 Name** and **MSN 2 Name** fields.

FIG. 54 REDUNDANT OPERATION VIA MSN-BLOCK SWITCHING



TAB. 4 EXAMPLE OF MSN ENTRIES (VALID FOR BOTH SYSTEMS)

	MSN-1	MSN-2
S ₀ 1	5271189	1111111
	5271189	1111111
S ₀ 2	5271219	1111111
	5271219	1111111

If the system is **active** the number of lines, as defined in the ISDN configuration, is displayed on the **MAGIC TOUCH** user interface (see CHAPTER 7.7.3.4, page 73).

If free lines are still available, the **inactive** system can still be used simultaneously for advanced production. The **MAGIC TOUCH** user interface displays the relevant lines for the **active** and **inactive** systems as per TAB. 5 and TAB. 6. If an odd number of call forwarding channels is used, the active system always gets an additional call forwarding channel.



The configuration of the ISDN lines (see CHAPTER 7.7.3.4, page 73) with the parameters **Number of B Channels visible**, **First B Channel used for Call Forwarding** and **Number** must be identical on both systems.

TAB. 5 EXAMPLES: AVAILABLE LINES AT THE REDUNDANT OPERATION

Configuration	Visible caller lines	One Telephone Hybrid System	1	2	Two Telephone Hybrid Systems	3	3	3	4	4	4	5	5	6
	1. Call forwarding		3	4		7	6	5	8	7	6	8	7	8
	Number of call forwardings		2	1		2	3	4	1	2	3	1	2	1
Active system	Visible caller lines		1	2		3	3	3	4	4	4	5	5	6
	Available call forwardings		1	1		1	2	2	1	1	2	1	1	1
Passive system	Visible caller lines		1	1		3	2	1	3	2	1	2	1	1
	Available call forwarding lines		1	0		1	1	2	0	1	1	0	1	0

TAB. 6 EXAMPLES: AVAILABLE LINES AT THE REDUNDANT SYSTEM

Configuration	Visible caller lines	Three Telephone Hybrid Systems	7	7	7	7	Four Telephone Hybrid Systems	7	7	7	7	7	7	7
	1. Call forwarding		12	11	10	9		15	14	13	12	11	10	9
	Number of call forwardings		1	2	3	4		2	3	4	5	6	7	8
Active system	Visible caller lines		7	7	7	7		7	7	7	7	7	7	7
	Available call forwardings		1	1	2	2		1	2	2	3	3	4	4
Passive system	Visible caller lines		4	3	2	1		7	6	5	4	3	2	1
	Available call forwarding lines		0	1	1	2		1	1	2	2	3	3	4

7.7.3.8 Quick Dial

When using the PC software, the system supports six quick dials. It supports three quick dials when using the optional *MAGIC Hybrid Keypads*.

The quick dials are displayed in the manual dial dialog (see CHAPTER 7.5.1.4, page 46) or on the *MAGIC TOUCH* user interface if the *Information for each caller* option (see CHAPTER 7.5.1.5, page 49) is deactivated.

FIG. 55 QUICK DIAL SETTINGS

Quick Dial	Name	Number	Audio Line	2nd. Prefix	VIP
1:	Technik	-38	PRE TALK	<input type="checkbox"/>	<input type="checkbox"/>
2:			not preselected	<input type="checkbox"/>	<input type="checkbox"/>
3:			not preselected	<input type="checkbox"/>	<input type="checkbox"/>
4:			not preselected	<input type="checkbox"/>	<input type="checkbox"/>
5:			not preselected	<input type="checkbox"/>	<input type="checkbox"/>
6:			not preselected	<input type="checkbox"/>	<input type="checkbox"/>

Quick Dial	Number	Audio Line
QD 1:	0	HOLD
QD 2:	0	HOLD
QD 3:	0	HOLD

After pressing the **OK** button all settings are accepted.

The **Cancel** key deletes all settings.

7.7.3.8.1 Used by MAGIC TOUCH

Six different *Quick Dial* numbers can be entered in the *Used by MAGIC TOUCH* box.

Via *Name*, enter the names of the participants.

The telephone number must be entered in the *Number* field.



If the Telephone Hybrid is operated through a PABX the *Prefix Numbers* (see CHAPTER 7.7.3.4.3, page 75) can be suppressed for internal calls via a minus sign ('-'). For this function, the PABX telephone number must be entered with a '-' prefix (Example: the PABX 130 must be entered as '-130').

The *Audio Line* selection field enables a pre-selection of the Audio interfaces, when the partner accepts the call. Select the desired *PRE TALK*, *HOLD* or *ON AIR/Alt. Ln* Audio interface. If it is desired to make the assignment just when establishing the connection, set *not preselected*.

In the case that a second prefix number is available (see CHAPTER 7.7.3.4,

page 73) the dialling of the partner with the second prefix number can be forced by the **2nd. Prefix** option.

When at least one **VIP** line is configured (see CHAPTER 7.7.3.5, page 76), this participant can be called via the **VIP** line by setting the **VIP** option.

7.7.3.8.2 Used by MAGIC Hybrid Keypad

In the **Used by MAGIC Hybrid Keypad** submenu three different **Quick Dial** numbers can be entered. These are stored directly in the system and can be used by the optional **MAGIC Hybrid Keypad**.

The telephone number must be entered in the field **Number**.

The selection field **Audio Line** enables a pre-selection of the Audio interface, when the partner accepts the call. Choose the desired Audio interface **PRE TALK**, **HOLD** or **ON AIR** (or **Alt. ON AIR Line 1 ... 4**).

7.7.3.9

Audio Level

The nominal Audio levels can be set separately for the input and output of each system. The input level for **Master/Slave** systems is selected in **Level In**. Correspondingly, the output level can be configured in **Level Out**. For the nominal level the values

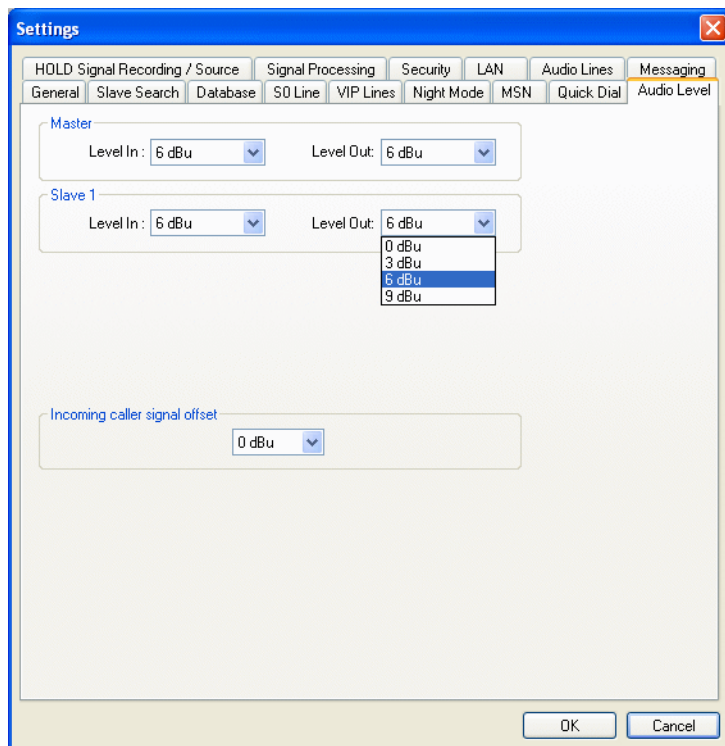
0 dBu, 3 dBu, 6 dBu and 9 dBu

are available.



The head room is 6 dB. Therefore, if the nominal level is 9 dBu a maximal level of 15 dBu can be achieved.

FIG. 56 AUDIO LEVEL SETTINGS



If the Audio level of the callers is, on average, too quite or too loud, the level can be increased or lowered down by the **Incoming caller signal offset** function.



Please note that the head room is decreased when increasing the level and vice versa.

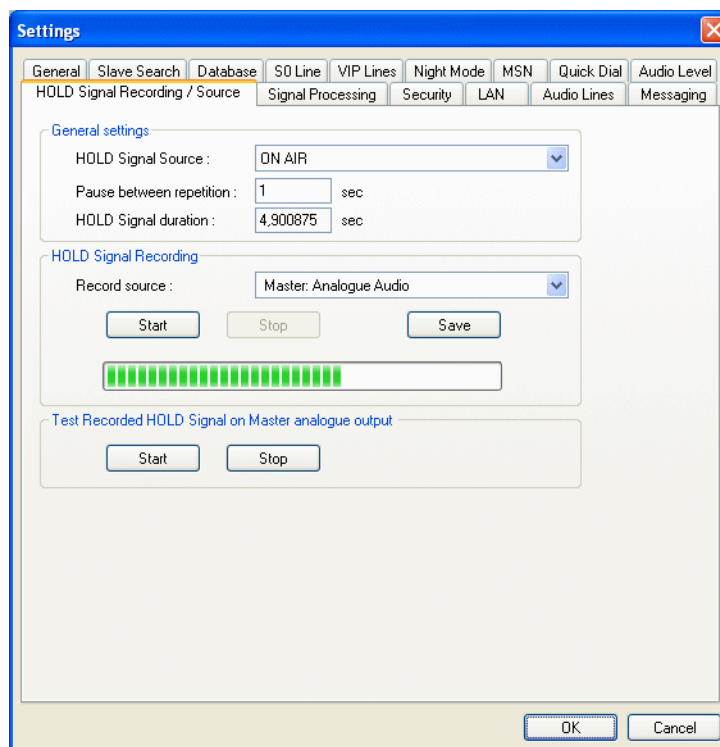
After pressing the **OK** button, the settings are accepted.

The **Cancel** key deletes all settings.

7.7.3.10 Hold Signal Recording/Source

The Hold interfaces of the system are configured via the link **Hold Signal Recording/Source**. An extended possibility is to store a **Hold** signal of 8 seconds duration in the system.

FIG. 57 HOLD SIGNAL RECORDING/SOURCE



After pressing the **OK** button, all settings are accepted.

The **Cancel** key deletes all settings.

7.7.3.10.1 General Settings

With the help of the **General Settings** → **Hold Signal Source** submenu, set the desired **Hold** signal source. Two options are possible:

- **On Air**: the caller hears the programme in the **Hold** mode. This setting is only available if the **On Air** Audio interface (see CHAPTER 7.7.3.14, page 98) was configured.
- **Hold**: in the **Hold** mode the caller hears the signal fed to the **Hold** interface. This setting is only available, if the **Hold** Audio interface (see CHAPTER 7.7.3.14, page 98) was configured.
- **Recorded Hold Signal**: the caller hears the Audio signal of max. 8 seconds, stored in the system (see CHAPTER 7.7.3.10.2, page 88).
- **Dynamic Hold**: the caller hears the Audio signal that is assigned to the line. This signal is either the **On Air** signal or an input signal of the **Alternative On Air Line 1...4** (see CHAPTER 7.7.3.1.2, page 60). This setting is only available if at least one **Alternative On Air** Audio interface (see CHAPTER 7.7.3.14, page 98) was configured.

The setting **Pause between repetition** is only relevant for the setting **Recorded**

Hold Signal. Enter the length of the pause in seconds which will be inserted when playing the stored **Hold** signal again.

The duration of the stored **Hold** signal is displayed in **Hold Signal duration**. The value can not be changed.

7.7.3.10.2 Hold Signal Recording

The recording of a **Hold** signal is done via **Hold Signal Recording**.

First, choose the **Record source** where the **Hold** signal will be recorded. The following interfaces can be selected:

- **Master: Analogue Audio**
- **Master: AES/EBU/ANALOGUE Module Left** (only if the optional module is installed)
- **Master: AES/EBU/ANALOGUE Module Right** (only if the optional module is installed)

Press **Start** to start the recording. The moving bar displays how much space has already been used from the storage space of 8 seconds.

The recording is interrupted via **Stop**.

By pressing the **Save** button, the recording is stored in the system.



Please note, that the recorded **Hold**-signal will be deleted in the system when doing an update of the firmware.

Record the **Hold** signal again after each unit update.

7.7.3.10.3 Test Recorded HOLD Signal on Master Analogue output

The stored signal can be checked via the analogue output of the Master system at any time, although so far it was not stored via **Save**.

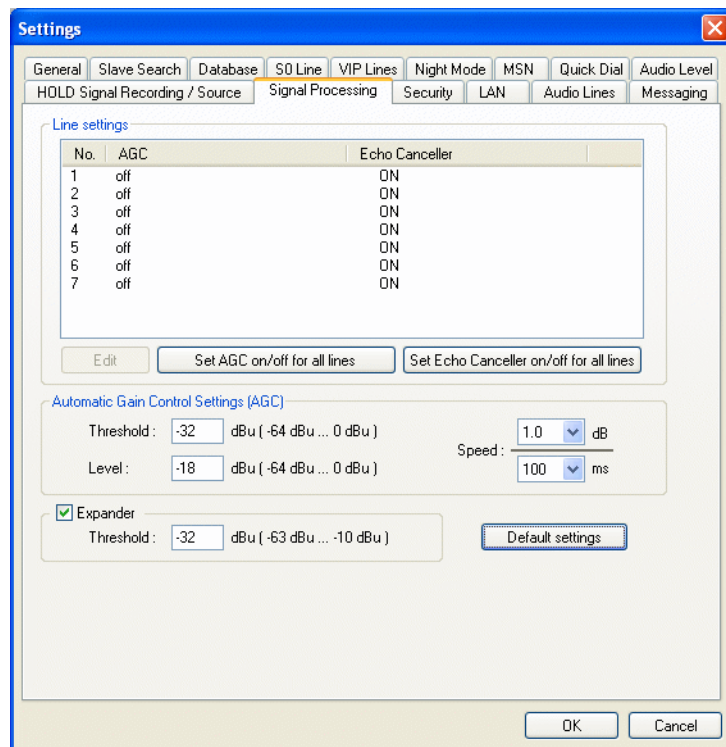
The **Start** button starts playing the recording.

Press **Stop** to finish the tapping of the recording.

7.7.3.11 Signal Processing

In the **Signal Processing** submenu, all parameters are listed which ensure an optimal Audio quality of the caller.

FIG. 58 SETTINGS FOR THE DIGITAL SIGNAL PROCESSING



After pressing the **OK** button, all settings are accepted.

The **Cancel** key deletes all settings.

7.7.3.11.1 Line Settings AGC and Echo canceller

All available lines are displayed in the **Line settings** list. For each line, an **AGC** (Automatic Gain Control) as well as an **Echo Canceller** can be turned on or off separately.



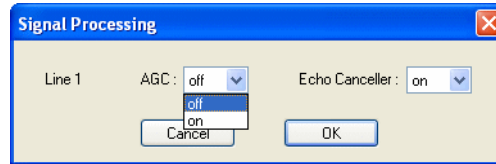
An echo canceller suppresses the so called line echo. It arises when the caller uses an analogue telephone. When using digital telephones (ISDN or mobile telephone) no line echo can arise. Since the line echo canceller would downgrade the calling signal of digital telephones, it is necessary to check at the beginning of a connection whether or not an analogue or a digital telephone is used. For this purpose a short test signal is transmitted when establishing the connection. On the basis of the received echo, it will be decided whether the line echo canceller will be activated or not.

Select the desired line and press then the **Edit** button. Switch the **AGC** and/or the **Echo Canceller ON** or **off**. Turning the Echo canceller on first causes a test signal to be transmitted when establishing the connection (see Info box). Whether or not the Echo canceller will be activated depends on the received Echo and is done automatically.



In the case of satellite connections, where the transmission time of the Audio signal is quite long, the Echo canceller can not work properly. Because of this, it is recommended that the Echo canceller is switched off when there are connections with a long transmission time.

FIG. 59 SWITCHING ON AND OFF OF THE AGC AND THE ECHO CANCELLERS



After pressing the **OK** button, all settings are accepted.

The **Cancel** key deletes all settings.

Via the **Set AGC on/off for all lines** key, the **AGC** can be switched on or off for all lines.

Equally the Echo canceller can be switched on or off via the **Set Echo Canceller on/off for all lines** key.

7.7.3.11.2

Automatic Gain Control Settings

An Automatic Gain Control is only useful when there is the possibility of making a pre talk with the caller where the correct level can be set.



An **AGC** is no wizard. Callers who are extremely quiet cannot be increased in any way. Very loud callers can not be decreased in any way.

The setting **Threshold** defines the level limit from which the signal of the **AGC** should be "monitored" (useful value: ~ **-32 dB**). Otherwise, too quiet signals (such as rush) would be increased by the **AGC**.

To avoid steps in the noise level, the **AGC** control speed should not be set too high in the **Speed** of the **AGC** setting. Likewise, it must not be set too low, otherwise the control will never reach the desired target level. The unit for this is dB/ms (useful value: ~ 1 dB/100ms).

The **AGC** nominal level of the **Level** setting defines the medium level of the signal, which should be set by the **AGC**. In the case of a signal without flicker that lies above the threshold value, this level is set after some 100 ms depending on the **AGC** control speed. When selecting the level it should be seen that this level is not set too high otherwise the hardware related level range is exceeded and distortions occur. A level that is set too low affects the understandability of the caller signal (useful value: ~ **-18 dB**).

The key **Default Settings** resets the values for the **AGC** and of the **Expander** to the default settings.

7.7.3.11.3

Expander

An **Expander** causes that all signals, which fall below a certain threshold to be completely suppressed. Therefore a rush from the caller side can not be heard anymore during pauses of the caller. The value of the expander threshold, called **Threshold** (useful value: ~ **-32 dB**) should always be selected in a way

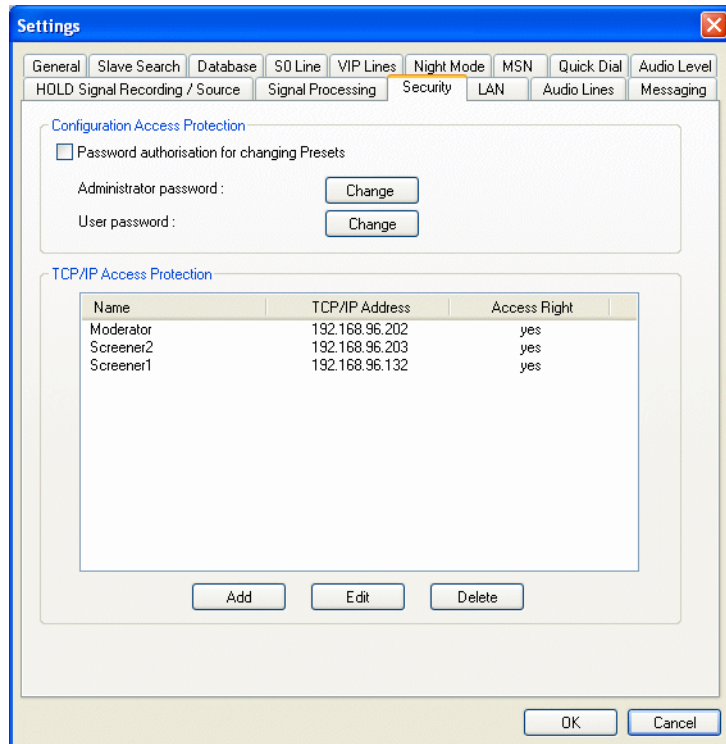
that matches the value of the **AGC** threshold. If there are overlaps of both thresholds, level variations of the signal occur.

The **Default Settings** key resets the values of the **AGC** and of the **Expander** to the default settings.

7.7.3.12 Security

Via the link **Security** all rights of access for the system are configured.

FIG. 60 SECURITY SETTINGS



After pressing the **OK** button all settings are accepted.

The key **Cancel** deletes all settings.

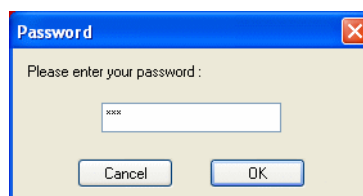
7.7.3.12.1 Access Protection Configuration

Whether a user is allowed to change the configuration or not, can be set via the **Configuration Access Protection** function.

To activate the password protection, set the **Password authorisation for changing Presets** option.

After the activation, the request of the password follows always.

FIG. 61 ENTRY OF A PASSWORD



After pressing the **OK** button configuration dialog opens.

The key **Cancel** deletes the entry.

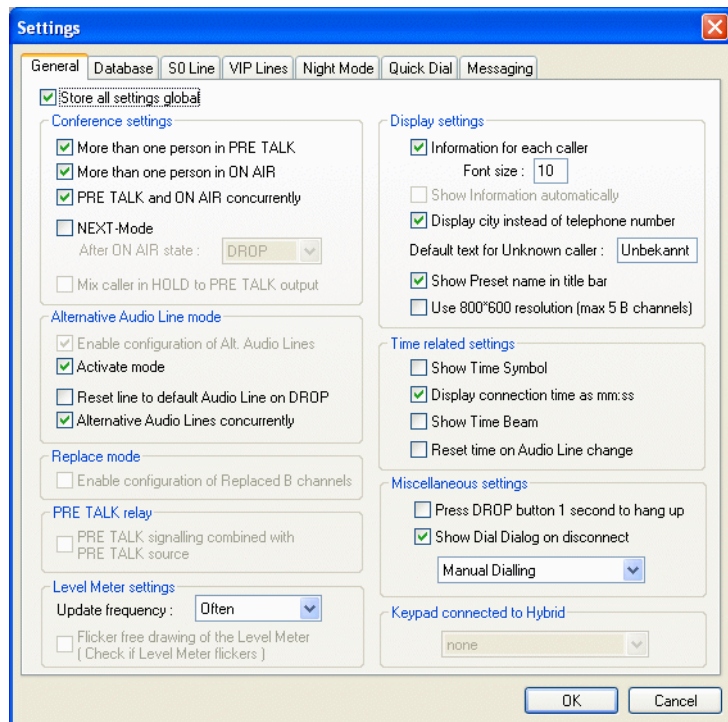


In the delivery condition no password is entered.

The system has two security steps:

- If the administrator is entered, all configuration possibilities are available.
- When the user password is entered, only settings which are **not** hardware related are available or possible (see Fig. 62).

FIG. 62 CONFIGURATION FOR USERS



A change of the administrator password is done by the key **Change** in **Administrator password**.

The user password can be changed by pressing the **Change** button in **User password**.

To change the password the following dialog displays.

FIG. 63 INPUT OF A NEW PASSWORD



In **New password** the new password can be entered. Confirm the entry in the field **Password confirmation**.

After pressing the **OK** button the new password is accepted.



Please keep your own password in mind. The password protection can only be cancelled by personnel expert of the company AVT.

The key **Cancel** deletes the changes.

7.7.3.12.2

TCP/IP Access Protection

The access to the Telephone Hybrid system is defined in **TCP/IP Access Protection**. Only PCs with a registered IP address have access to the system.



All PCs which want to have access to the Hybrid system via the software options **MAGIC TOUCH LAN** or **MAGIC SCREENER** must be entered. This also applies if **MAGIC TOUCH**, **MAGIC TOUCH LAN** and **MAGIC SCREENER** are to be used on **one** PC in parallel. In this case, enter the PC's own IP address.

For the **MAGIC TOUCH LAN** software, a so called **Floating Licence** is assigned, that means only as much PCs with **MAGIC TOUCH LAN** software have access to the system in parallel as LAN licences (see CHAPTER 7.8.1, page 110) are released.

In principle with the **MAGIC SCREENER** data base software an unlimited number of PCs can have access to the Telephone Hybrid system simultaneously, since the licence is released as **Multi User Licence**. Please note that the performance of the MS[®] Access data base with DAO¹ access decreases if there are more than 5 users.

¹ DAO = Data Access Objects, Data access method of the Jet-Engine of MS[®] Access

To add an IP address press the **Add** button, to change an entry click the key **Edit** and to delete an entry press **Delete**.

After pressing the **Add** or the **Edit** buttons, the window for entering the access information opens. Enter in **Name**, an useful name for an easier identification of the PCs.

FIG. 64 ENTRY OF A TCP/IP ADDRESS



This name will be displayed in the list of the active TCP/IP connections in **Administration** → **List TCP/IP Connections** (see CHAPTER 7.8.3, page 113) as soon as the PC access the Hybrid system.

Enter in **TCP/IP Address** the IP address of the PCs.

Under **Access Right** activate the access right with **yes**. To withdraw the access right of a PC - without deleting the entry - set this function to **no**.

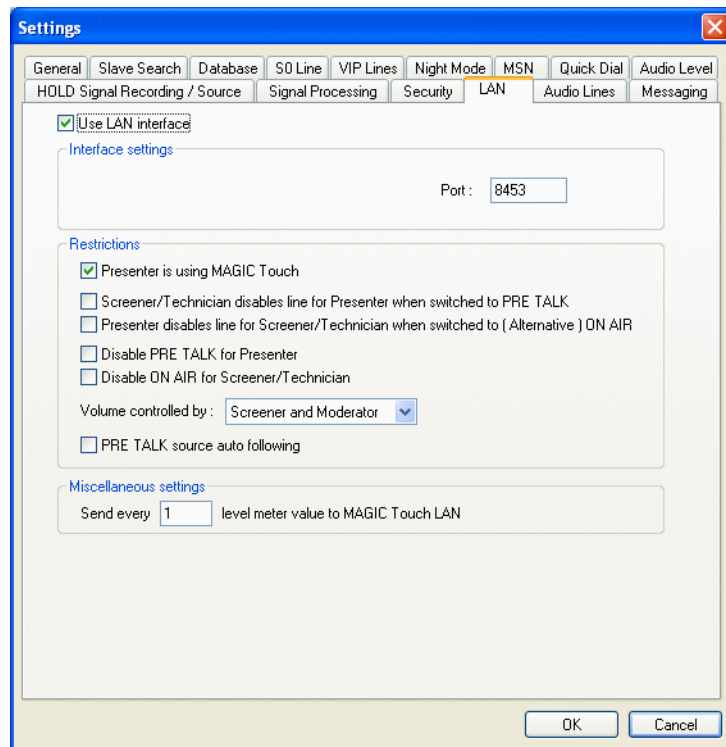
After pressing the **OK** button all settings are accepted.

The key **Cancel** deletes all settings.

7.7.3.13 LAN Settings

The link **LAN Settings** enables the configuration for the access via the software option **MAGIC TOUCH LAN**. This link is only available if at least one LAN Licence is released on the system (see CHAPTER , page 116).

FIG. 65 LAN SETTINGS



After pressing the **OK** button, the settings are accepted.

The **Cancel** key deletes the settings.

To activate LAN access for **MAGIC TOUCH LAN** activate the **Use LAN interface** option.

7.7.3.13.1 Interface settings

Under **Interface settings** set the **Port** for the TCP/IP access. The default value is **8453**. This port should only be used if it is already in use in your network.



If you want to change the port do not forget to set the changes in the **MAGIC TOUCH LAN** Client as well. The port address must be identical to all **MAGIC TOUCH LAN** Clients.



7.7.3.13.2 Restrictions

In **Restrictions** the user rights of the LAN clients can be set.

If the option **Presenter is using MAGIC Touch** is activated the presenter uses the **MAGIC TOUCH** software and the separate screener place uses the **MAGIC TOUCH LAN** software (e.g. for screening, monitoring, etc.). Other-


wise a vice versa assignment is made.




This assignment is important to ensure a correct lightning up and down of the keys  (Pre Talk) and  (On Air).




When activating the option **Screener/Technician disables line for Presenter when switched to PRE TALK**, the line for the presenter is blocked as soon as the screener (or technician) puts a caller in the **Pre Talk** mode. On the presenter's screen, the line will be displayed in grey. Only when the screener has put the caller in the **Hold** mode the presenter has access to the line again. If the option is deactivated the presenter and the screener have both access to the line.

When activating the **Presenter disables line for Screener/Technician when switched to (Alternative) ON AIR** option the line is blocked for the screener (or technician), as soon as the presenter puts a caller **On Air** or on **Alt. ON AIR 1 ... 4**. Now the line is displayed in grey for the screener/technician. The screener/technician has again access to the line when the presenter puts the caller on **Hold**. If the option is deactivated the presenter and screener/technician have both access to the line.

If the show host is not supposed to have any **Pre Talk** functions, the  (Pre Talk) button can be masked out by activating the **Disable PRE TALK for Presenter** function.

Likewise, it is possible to mask out the key  (On Air) for the screener. For this set the **Disable ON AIR for Screener/Technician** option.

Via the selection **Volume controlled by** you are able to define who is allowed to use the gain control (see CHAPTER 7.5.2.4, page 52) for a caller. The **Screener and Presenter** selection allows gain control by the screener (or technician) and the show host simultaneously. Consequently, the **Screener** setting gives only the screener the right for the gain control, the **Presenter** setting gives only the show host the right for this.

The switch over of the **Pre Talk** source (see CHAPTER 7.5.1.1, page 45) can be automatised, e.g. if the presenter uses always the Audio input and if the screening position uses always the handset. For this set the **PRE TALK source auto following** option. Now, if the show host presses the  (Pre Talk) button, the Audio input (setting  key) will be used automatically. If the screener (or technician) uses a line in the **Pre Talk** mode, the **Pre Talk** source switches over automatically to the handset (key setting ).



The assignment depends on the option **Presenter is using MAGIC Touch** (see CHAPTER 7.7.3.13.2, page 95).

Please note that physically there is only one **Pre Talk** Audio interface, that means that the show master and the screener can not use the **Pre Talk** function simultaneously.

If the show master and the screener want to use an independent **Pre Talk** interface the **alternative Pre Talk Audio interface** must be established (see CHAPTER 7.7.3.14, page 98).

7.7.3.13.3

Miscellaneous Settings

The transmission of the level headroom to the LAN clients can burden the network depending on the bandwidth, especially if a lot of LAN clients are used in parallel. To reduce the system load it is possible to enter in **Miscellaneous Settings** → **Send every N level meter value to MAGIC TOUCH LAN** for N a number between 1 and 10. If the set value is 1, each telegram will be transmit-

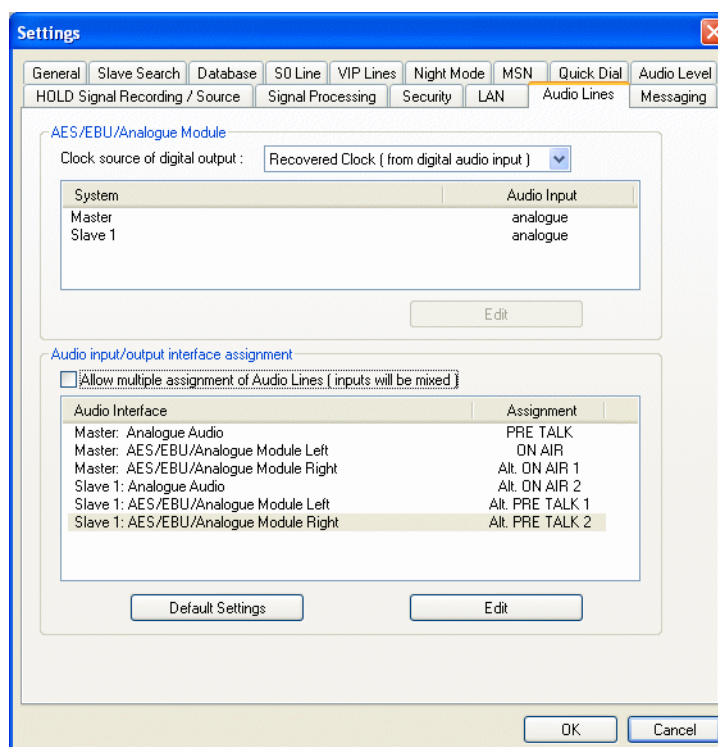
ted.

7.7.3.14

Audio Lines (Configuration of the Audio interfaces)

The Audio interfaces are configured with the **Audio Lines** link (configuration of the Audio interfaces) .

FIG. 66 CONFIGURATION OF THE AUDIO INTERFACES



After pressing the **OK** button, all settings are accepted.

The **Cancel** key deletes all settings.

7.7.3.14.1

AES/EBU/ANALOGUE Module



The following configuration is only possible if an **AES/EBU/ANALOGUE Module** is equipped. If the module is not equipped see CHAPTER 7.7.3.14.2.

When using digital AES/EBU outputs the clock can be defined with **Clock source of digital output**, which operates this interface. The following settings are possible:

- **Recovered Clock (from digital audio input)**
This setting can be used if a digital source is connected to the digital input. The digital output signal is synchronous to the digital input signal.
- **Internal Clock**
The clock for the output of the digital output signal is generated internally. In this case the sample rate is always 48-kHz.
- **External Clock**
In this setting the clock that defines the frequency of the output signal must be fed in via the BNC. The sample rate must be 48-kHz.

The corresponding word clock can be accessed as an output via the BNC con-

nector.



The digital input and output have separate sample rate converters, therefore any digital Audio source can be connected to the input.

In the panel below the configuration takes place whether the digital or the analogue input will be used. The analogue and the digital outputs are always available in parallel.

The part systems are named with **Master**, **Slave 1**, **Slave 2** and **Slave 3** (see Fig. 12, page 33).

The selection of the analogue or digital input Audio interface takes place by choosing the system (**Master**, **Slave 1**, **Slave 2** and **Slave 3**) and by pressing the **Edit** button. In the selection panel set **analogue** or **digital**.



When selecting the **analogue** input this system provides three analogue inputs (already existing Audio interface of the system + two other interfaces of the module) and three analogue Audio outputs. Both analogue outputs of the module are additionally released in parallel to the digital Audio interface of the module. Set as clock source in **Clock source of digital output** the operating mode **Internal Clock** (see page 98).

When selecting the **digital**¹ inputs of the module, one analogue and two digital Audio inputs as well as two digital and one analogue outputs are available. The digital outputs of the module are additionally released in parallel to the analogue Audio interfaces of the module. Set as clock source in **Clock source of digital output** one of the three operating modes described above (see page 98).

7.7.3.14.2

Audio input/output interface assignment

This setting defines the function of each Audio interface of the system.



The assignment of the function is always related to the input **and** to the output.

If the **AES/EBU/ANALOGUE Module** is not equipped each part system has only one analogue Audio interface. In **Assignment 1** the according **ON AIR** signal of the callers can be found.

In the case you want to use the optional **handset** on the same interface you are able to select via **Assignment 2** the function **PRE TALK** additionally.



Each system module has three relays. One of these relays can be used for the signalling of the **Pre Talk** mode (see CHAPTER 7.7.3.15, page 102). Connection to the mixer can be made via this relay.

If the optional **AES/EBU/ANALOGUE Module** (see CHAPTER A4.6, page 147) is equipped the system is extended to two analogue or two digital AES/EBU Audio inputs and outputs. These inputs and outputs can be op-

¹Please note that physically this is only **one** AES/EBU interface.



tionally configured to the maximum extend possible.

The optional **AES/EBU/ANALOGUE Module** can also be attached into the slave system.

A maximum number of **twelve**¹ physical Audio interfaces are available in the maximum build of the system.

¹ Until release 3.0 only maximal seven Audio interfaces are available.

Press the **Edit** button to select the relevant **Audio Interface** and define the desired **Assignment** to the interface.

The **Default Settings** key assigns the most useful default setting to the interfaces.

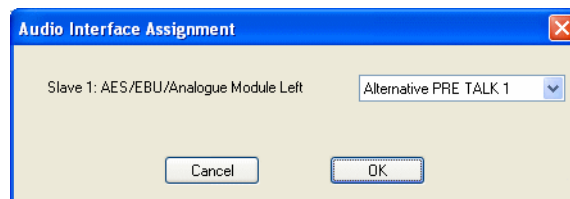
The **Allow multiple assignment of Audio Lines (inputs will be mixed)** option enables an assignment to be set multiple times to different physical interfaces. The **On Air** signal can be output, e.g. to the **AES/EBU/ANALOGUE Module left** and **AES/EBU/ANALOGUE Module right** outputs simultaneously.



If a function is used several times for different outputs the related input signals are mixed additively.

In the above mentioned example **On Air**, the back signal to the caller is generated out of the input signals of the left and the right channel of the **AES/EBU/ANALOGUE Module**.

FIG. 67 ASSIGNMENT OF THE AUDIO INTERFACE FUNCTION



Depending on the configuration of the systems the following assignments are possible:



The assignment applies always for the input **and** the output simultaneously.

- **PRE TALK with Handset**¹
- **PRE TALK without Handset**



If the **Pre Talk** function is defined to a digital Audio interface (**PRE TALK without Handset**), the **Handset** can only be used if the Audio interface **Master/Slave: Analogue Audio** for **Pre Talk (PRE TALK with Handset)** is configured. The system chooses the appropriate Audio interface automatically when selecting the **Pre Talk** source (see CHAPTER 7.5.1.1, page 45).

- **HOLD**: feeding of a separate **Hold** signal. For this, please pay also attention to the configuration of the **Hold** signal source (see CHAPTER 7.7.3.10, page 87).
- **ON AIR**: output of the mixing signal of all callers in the **On Air** mode. At the input the programme signal **without** caller should be feeded.

¹This selection is only possible for the analogue default interface of the system

- **Alternative ON AIR 1 ... Alternative ON AIR 4** the alternative **On Air** lines can be used e.g. for an operation with several controllers without mixing of the callers. The **MAGIC TOUCH** user has access to all configured **On Air** lines, if the option **General** → **Alternative Audio Line Mode** → **Activate Mode** was set (see CHAPTER 7.7.3.1.2, page 60).
- **Alternative PRE TALK 1 ... Alternative PRE TALK 6** the alternative **Pre Talk** lines can be used for a pre talk at the **MAGIC TOUCH LAN** or at the **MAGIC SCREENER** position and they are completely independent of the **Pre Talk** of the **MAGIC TOUCH** user. This user has no access to the alternative **Pre Talk** lines. They are only available if the operation mode **General** → **Alternative Audio Line Mode** (see CHAPTER 7.7.3.1.2, page 60) was configured.



The alternative lines can also be used to provide different **Pre Talk** or **On Air** Audio signals to different studios (see CHAPTER 6, page 35).

- **Replace B Channel Line 1...7** This selection is only available if the operating mode **General** → **Replace Mode** (see CHAPTER 7.7.3.1.3, page 63) has been activated.
- **not used**: This interface is not used.

After pressing the **OK** button, all settings are accepted.

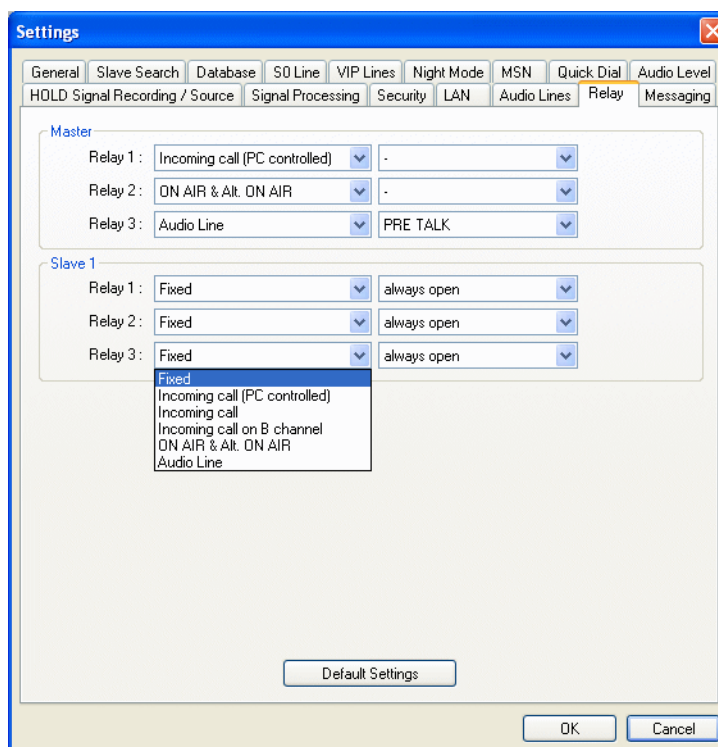
The **Cancel** key deletes all settings.

7.7.3.15

Relays (Relays settings)

The configuration of the three relays on each system (see CHAPTER A4.5, page 146) is done via the **Relay** link.

FIG. 68 CONFIGURATION OF THE RELAYS



After pressing the **OK** button, all settings are accepted.

The **Cancel** key deletes the settings.

Depending on the number of systems available, three relays **Relay 1 ... Relay 3** are displayed for each system. The following settings are possible for these relays:

- **Fixed:** The relay is fixed. After turning the system on the relay can always be closed (**always closed**) or can always be open (**always open**).
- **Incoming call (PC controlled):** To suppress a signalling for blocked callers, the telephone number is first transmitted to the PC. If the caller is not blocked the relay will be closed. Otherwise there will be no signalling. Normally define this setting for call signalling.
- **Incoming call:** If there is an incoming call on any channel the relay will be closed.



In this operating mode if there is no check of the telephone number, the relay signals an incoming call even if the caller is blocked.

- **Incoming call on B channel:** if there is an incoming call on a certain B channel the relay will be closed. The B channel can be defined in the second column. According to the setting **SO Line** → **General** → **Number of B Channels visible** (see CHAPTER 7.7.3.4.1, page 73) the possible B channels are displayed.
- **ON AIR & Alt. ON AIR:** the relay will be closed as soon as one of the lines is switched in the **On Air** or **Alternative On Air** mode (see CHAPTER 7.7.3.1.2, page 60).
- **Audio Line:** as soon as one of the lines is switched to the mode defined in the second column the relay will be closed. In this selection all defined Audio interfaces (see CHAPTER 7.7.3.14, page 98) will be displayed.



If the **General** → **Pre Talk Relay** → **Pre Talk Signalling combined with Pre Talk Source** option (see CHAPTER 7.7.3.1.4, page 66) is active, the **Audio Line** → **PRE TALK** setting must be defined at least for one relay.

The default settings will be defined by pressing **Default Settings**.

In the Master system the function of the relays will be set as following:

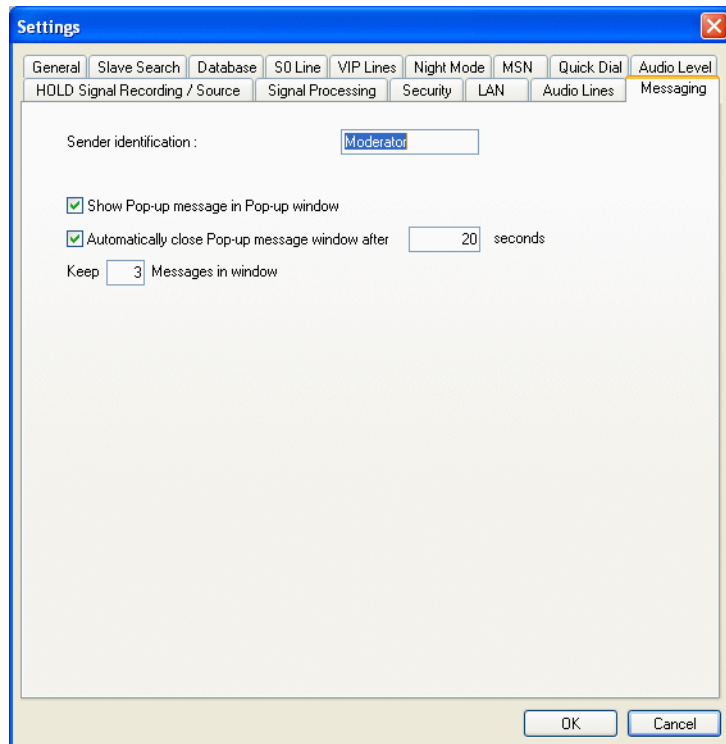
- **Relay 1: Incoming call (PC controlled)**
- **Relay 2: ON AIR & Alt. ON AIR**
- **Relay 3: Audio Line → PRE TALK**

When using slave systems all relays will be set to **Fixed** → **always open**.

7.7.3.16 Messaging

Via the **Messaging** (messaging settings) link the configuration is set for sending and receiving of short messages between users of the **MAGIC TOUCH**, **MAGIC TOUCH LAN** or the **MAGIC SCREENER** software.

FIG. 69 CONFIGURATION OF THE MESSAGING PANEL



After pressing the **OK** button, all settings are accepted.

The **Cancel** key deletes all settings.

The **Sender identification** field supports the entry of a name to identify the sender of the message. The name is prefixed automatically to the message.

If the **Show Pop-up message in Pop-up window** option is active, the received message is displayed immediately in the window.

The pop-up window will be close automatically after a certain period of time. This time period is set via the **Automatically close Pop-up message window after N seconds** option. For N, enter in seconds, the duration for the window to be open.

Several messages can be stored in a popup window. Enter in **Keep N messages in window**, the number N for the maximal amount of messages to be stored.

7.7.3.16.1 Sending of a message

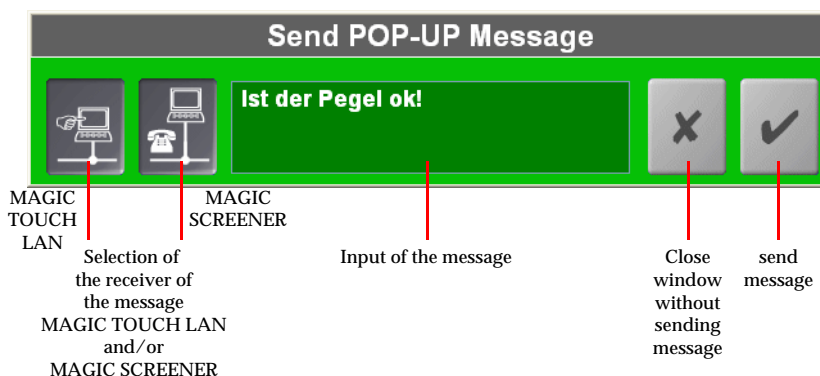
Send a message by simultaneously pressing the key combination **CTRL+W** in the main window or **CTRL+W** (W for Write) on the PC keypad. Alternatively, the **Messaging** → **Write Pop-up Message** submenu can be used.



FIG. 70 MESSAGE VIA MENU SEND





The window opens to enter the message.

FIG. 71 POP-UP WINDOW FOR SENDING MESSAGE



The two left buttons support the addressing of the message. Normally, the message is send to all users connected to the **MAGIC TOUCH LAN**  and **MAGIC SCREENER** . De-activate the relevant symbol to exclude a group.

Enter the message in the input field. Your identification (see CHAPTER 7.7.3.16, page 104) is prefixed automatically when sending the message.

By pressing the  button the popup window closes without sending the message. The message is sent via the  key and the window closes afterwards.

7.7.3.16.2 Received message

If the **Show Pop-up message in Pop-up window** option (see CHAPTER 7.7.3.16, page 104) is active, the popup window is opens when receiving a message.


To open the message window **manually**, press the key combination **CTRL+R** simultaneously in the main window, or **CTRL+R** (R for Read) on your PC keypad. Alternatively, the **Messaging** → **Show Pop-up Message Window** submenu can be used.

The message window opens and the last message(s) with the receiving time is/are displayed.

FIG. 72

RECEIVED MESSAGES



The  key closes the window.



After a manual pop-up, the window is not close automatically.

7.7.4

Presets Submenu

To provide a faster reconfiguration when necessary, the system allows all settings which have been made to store in **Presets**.

Nearly all settings which can be made in a system configuration are stored in a **Preset**.

**Exceptions:**

Line Numbering (see CHAPTER 7.7.2, page 56)

Store all settings global (see CHAPTER 7.7.3.1, page 58)

Use 800x600 resolution (see CHAPTER 7.7.3.1.6, page 66)

Flicker Free Drawing (see CHAPTER 7.7.3.1.5, page 66)

Configuration Access Protection (see CHAPTER 7.7.3.12.1, page 92)

A **Preset** is activated by clicking a **Preset Name** in **Configuration** → **Presets**.

Alternatively, a link which includes the **Preset Name** can be generated on the PC. For this purpose, copy the existing **MAGIC TOUCH** shortcut  under **Start** → **Programme** → **MAGIC TOUCH**.

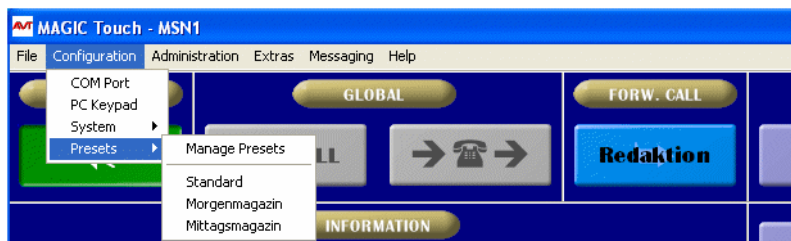
Mark the shortcut by clicking with the right mouse button and select **properties**. Then enter the **Preset Name** at the end in the existing entry in **target** field.

Example (if **MAGIC TOUCH** is installed in the default directory):

„C:\Program\MAGIC Touch\Telephone Hybrid.exe" Breakfast TV

Here „Breakfast TV“ is the name of the **Preset**. Please note that the **Preset Name** is **not included** within quotation marks.

FIG. 73 SUBMENU PRESETS

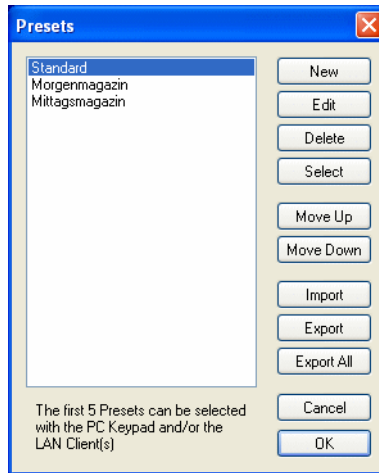


7.7.4.1

Manage Presets

The generated **Presets** can be managed via **Manage Presets**.

FIG. 74 PRESETS ADMINISTRATION

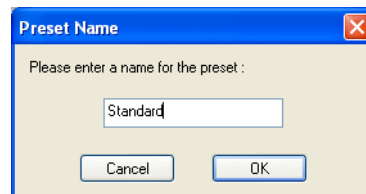


All available **Presets** are displayed in the **Presets** list. The first five **Presets** are still available when operating separately via **MAGIC TOUCH LAN** and **MAGIC Hybrid Keypad PC** (see CHAPTER 7.7.2, page 56).

With the help of the **Move Up** (move preset up) and **Move Down** (move preset down) keys, all presets can be listed in the desired order.

New generates a new **Preset**. The name for the new configuration can be entered in the **Preset Name** dialog window.

FIG. 75 DIALOG FOR ENTERING THE PRESET NAME

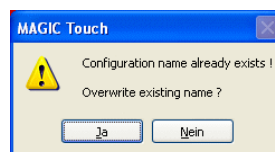


The new configuration is generated after pressing the **OK** button. Here all settings are accepted as basis for the new configuration. Afterwards, the system configuration opens automatically.

The **Cancel** key closes the entry dialog without generating a new configuration.

If a name for a configuration already exists, an advisory message is displayed.

FIG. 76 DIALOG FOR ENTERING THE PRESET NAME



If this configuration is to be overwritten confirm the question with **Yes**. By

clicking **No** the entry is cancelled.

The **Edit** key enables the marked **Preset** to be changed. The system configuration is displayed immediately.

A marked **Preset** is deleted by the **Delete** button. Note, there will be no confirmation check.

Pressing **Select** activates the marked configuration.

With the help of the **Import** key, configurations which have previously been exported, can be imported. The file suffix for **Hybrid Configurations Files** is **.hcf**.

To store a configuration press the **Export** button.

All existing **Presets** can be stored simultaneously in one directory with the **Export All** key.

After pressing the **OK** button, all settings for the **Preset** order are accepted.

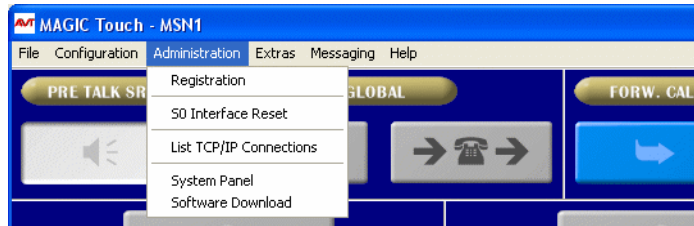
The **Cancel** key deletes all settings for the **Preset** row order. A deleted **Preset** cannot be re-established.

7.8

Menu Administration

In the **Administration** menu, all functions for the administration of the system are displayed.

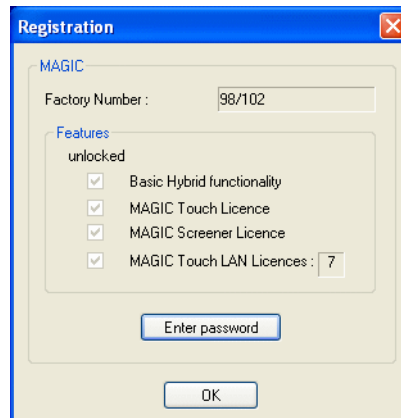
FIG. 77 MENU ADMINISTRATION



7.8.1

Registration Submenu

FIG. 78 SUBMENU REGISTRATION



Different software options are available for the system. They can be unlocked via a password. The password coupled to the serial number of the system. Open the registration menu with **Administration** → **Registration** to check and to unlock options.

The unlocked options can be controlled via **Features**. If the **unlocked** check mark is set, the options can be used.

- **Basic Hybrid functionality**: this option must always be set.
- **MAGIC Touch Licence**: if this option is set, the system can be used together with the **MAGIC TOUCH** software.
- **MAGIC Screener Licence**: this option supports the optional use of the **MAGIC SCREENER** data base software.
- **MAGIC Touch LAN Licences**: if the system is to be used separately via the LAN, at least 1 licence must be unlocked. The maximum number of LAN licences is 7, that means up to seven PCs can have access simultaneously via the **MAGIC TOUCH LAN** software to **MAGIC TOUCH**.

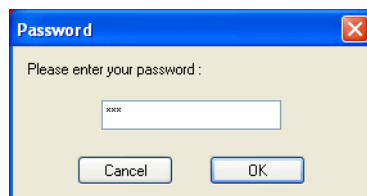
If the system is upgraded, a new password is provided by AVT.



For upgrades, the factory number of the **circuit board** of the unit is not relevant. When placing an order, always indicate the serial number. The **Factory Number is** displayed in the registration dialog.

To enter the password, press the **Enter password** button. Now enter the password in the relevant dialog and press the **OK** button.

FIG. 79 INPUT OF THE PASSWORD



If the password was entered properly the system is reset and rebooted again. After approximately one minute the new functionality is available.

The **Registration** window is closed by pressing the **OK** button.

7.8.2

S₀ Interface Reset Submenu

When changing the ISDN connection line, a reset of the S₀ interface in the system is essential. Click on the **S₀ Interface Reset** submenu to do the reset.



Please note that **all existing connections** are dropped. For safety a caution message is displayed.

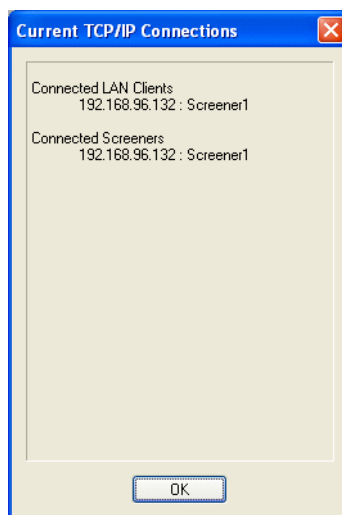
7.8.3

List TCP/IP Connections Submenu

To check which PCs are currently connected to the **MAGIC TOUCH** software, click on **Administration** → **List TCP/IP Connections**. The list differentiates between **Connected LAN Clients** who use the **MAGIC TOUCH LAN** software, and **Connected Screener** who use the **MAGIC SCREENER** software. For each connection the **IP-Address** and the relevant **Name** is displayed. This name is entered in **Security** → **TCP/IP Access Protection** (see CHAPTER 7.7.3.12.2, page 94).

The window is closed by pressing the **OK** button.

FIG. 80 LIST OF THE TCP/IP CONNECTIONS



7.8.4

System Panel Submenu

Via the **Administration** -> **System Panel** submenu the **System Panel** opens. This is only used for service purposes. Entries must only to be made if the AVT support asks you to do so.



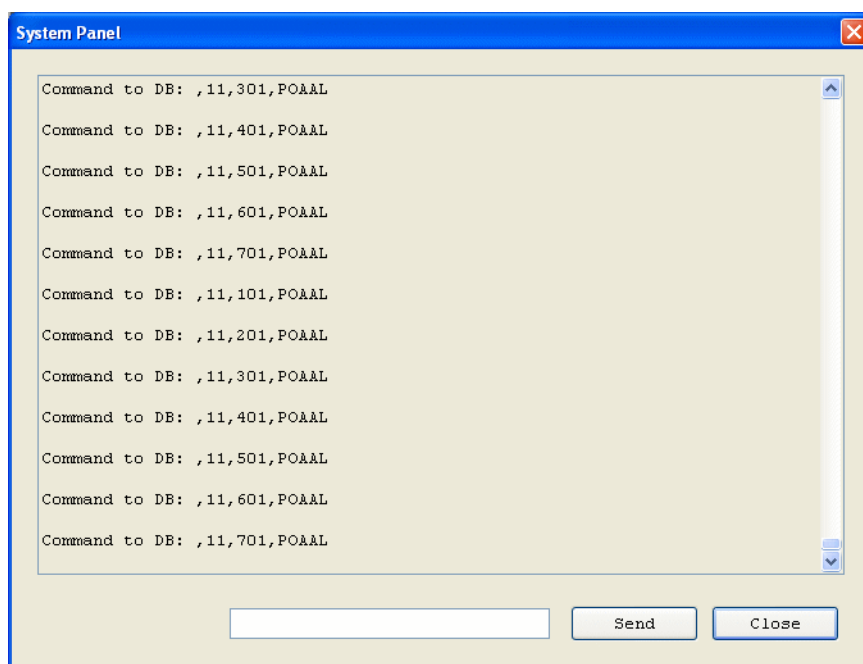
Faulty entries can lead to failures in the system.

Only enter commands when asked to do so.

An entry is send by pressing the **Send** key.

The **System Panel** is closed by pressing the **Close** key.

FIG. 81 SYSTEM PANEL



7.8.5

Software Download Submenu



New software downloaded, for example, from our homepage always includes the Windows PC software and the firmware for the system.

When making an update, the PC software and the firmware must always be updated.

The current software can be found under the internet address

<http://www.avt-nbg.de>

Go to **Service** and **Software-Registration**.

In case you are not already registered take a moment to do so. Registered users are sent a message automatically as soon as new software or other news for the **MAGIC ISDN Telephone Hybrid** is available.

When the question „What product are you using?“ appears, enter **MAGIC ISDN Telephone Hybrid**. Subsequently define your own **user name** and your own **password**¹. When asked for the contact address, enter at least your email address. Then send the registration. After a short time you will receive a confirmation. You then have free access to the download area via **LOGIN**.

If you are already registered, you can go directly to the **Software Download** by clicking on **LOGIN**. Enter your user name and your password.

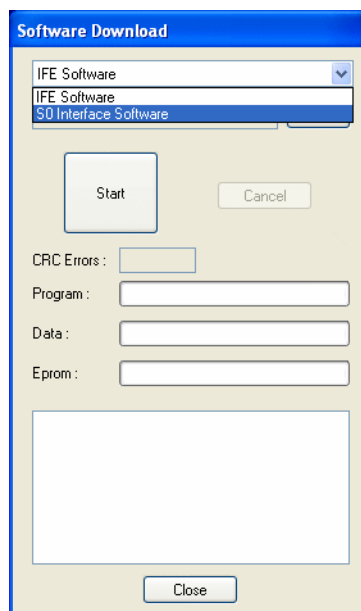
The **MAGIC TOUCH** software has the Ident-No. **430128**

¹ Keep your user name and password very well in mind. The password is not known to AVT. In case you forget your password send a short email, with your username to AVT. We will delete the registration and you will be able to register again.

First install the new software on your PC. The files with the new firmware are also stored (files: **ife_hybr** and **S0**) on your PC during the installation.

Via **Administration** -> **Software Download** open the window to load a new firmware on the system.

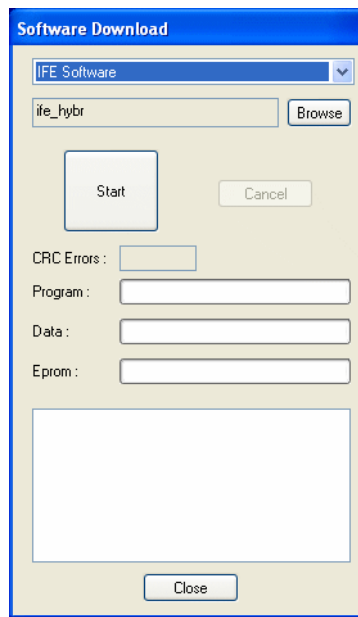
FIG. 82 S0 FIRMWARE DOWNLOAD



First select the **S0 Interface Software**. By pressing the **Browse** button, search for the file **s0.ch**. This file can be found in the **MAGIC TOUCH** installation directory software. Then press the **Start** key. The download procedure starts and takes approx. 10 minutes.

After downloading the ISDN software, start the download for the IFE (interface unit).

FIG. 83 IFE FIRMWARE DOWNLOAD



Select **IFE Software**. Via the **Browse** button look for the file **ife_hybr.gpb**. This file can be found in the directory of the **MAGIC TOUCH** software installation. Then press the **Start** button. The download process starts and takes approx. 5 minutes. Following this, a reset of the system is carried out.

Close the window with the **Close** button. After booting the system the new functions are available.



If your Hybrid system consists of a Master **and** a Slave system **all** systems must be updated according to the above detailed procedure. For this, connect the RS232 cable of the PC to the relevant RS232 interface of the respective system.



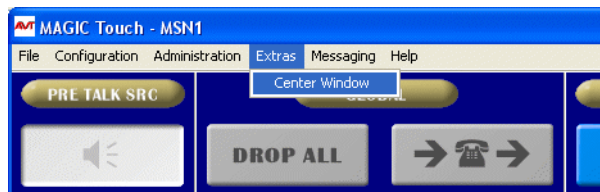
If the **MAGIC TOUCH LAN** and/or **MAGIC SCREENER** options are also being used together with the **MAGIC TOUCH** software, these options must also be updated.

7.9 Extras Menu

7.9.1 Submenu Center Window

If the **MAGIC TOUCH** windows on your screen are not properly aligned, they can be centered using **Extras** → **Center Window** menu.

FIG. 84 MENU EXTRAS



7.9.2 Messaging Menu

7.9.2.1 Submenu Write Pop-up Message

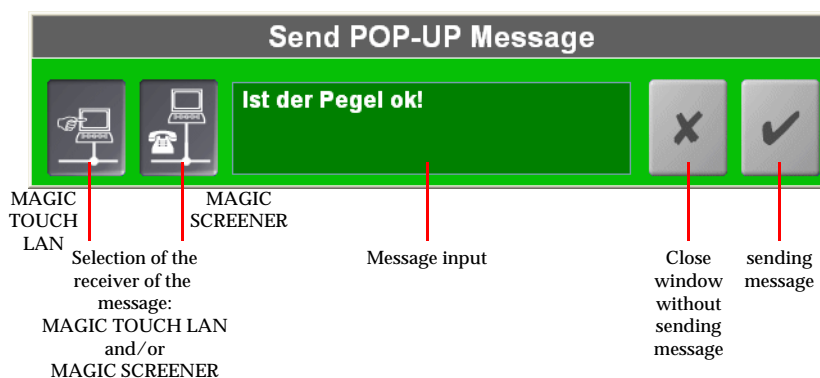
A message can be sent by pressing in the main window, the **CTRL+W** or **CTRL+W** (W for Write) key combination on your PC keypad. Alternatively, the **Messaging** → **Write Pop-up Message** submenu can be used.

FIG. 85 MESSAGE VIA MENU SEND





The window opens for entering a message.

FIG. 86 POP-UP WINDOW FOR SENDING MESSAGE



The two keys on the left support the addressing of the message. Normally, the the message is always sent to all connected **MAGIC TOUCH LAN** and **MAGIC SCREENER** users. Deactivate the relevant symbol to exclude a group.

Enter the message in the input field. Your identification (see CHAPTER 7.7.3.16, page 104) will automatically be prefixed when sending the message.

By pressing the  key, the popup window will be closed without sending the message. Pressing the  button sends the message and the window is closed afterwards.

7.9.2.2 Show Pop-up Message

If the **Show Pop-up message in Pop-up window** (see CHAPTER 7.7.3.16, page 104) option is active, the popup window will be closed automatically when receiving a message.


To open the message window **manually** press the **CTRL+R** or **CTRL+R** (R for Read) key combination simultaneously in the main menu window on your PC. Alternatively, the **Messaging** → **Show Pop-up Message Window** submenu can also be used.

The message window will open and the last message(s) is/are displayed with the received time.

FIG. 87

MESSAGES RECEIVED



The message can be closed with the  button.



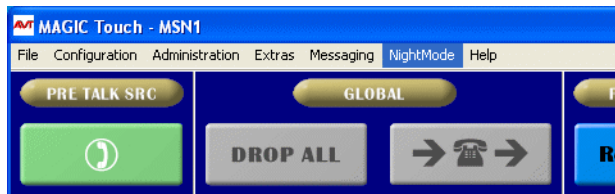
After a manual popup, the window will not be closed automatically.

7.10

Menu Night Mode

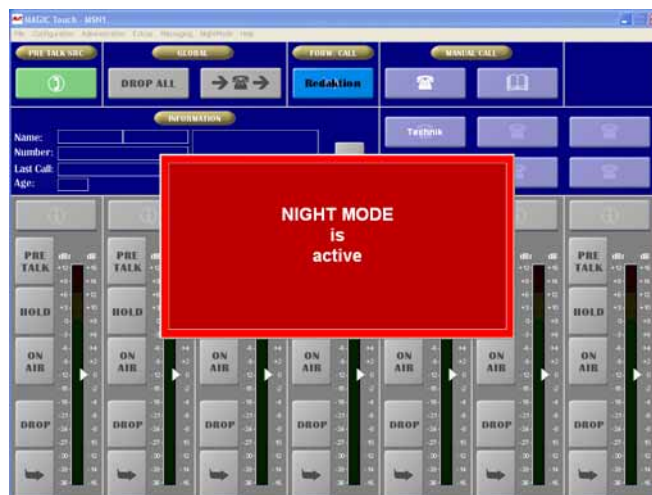
If the **Night Mode** (see CHAPTER 7.7.3.6, page 79) has been configured, the menu **Night Mode** is displayed on the menu bar of the **MAGIC TOUCH** user interface. The **Night Mode** can be activated and deactivated via this menu.

FIG. 88 MENU NIGHT MODE



The active **Night Mode** is displayed on the **MAGIC TOUCH** user interface as shown.

FIG. 89 ACTIVE NIGHT MODE



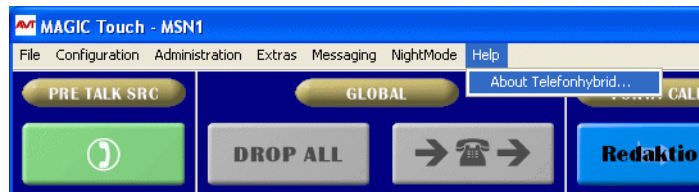
7.11

Help Menu

7.11.1

About MAGIC TOUCH Submenu ...

FIG. 90 MENU HELP



In the **Help** → **About Telephone Hybrid** submenu, the information on the installed software is displayed. The software conditions displayed in brackets refers to slave systems.

FIG. 91 ABOUT TELEPHONE HYBRID



After a software download, all Master and Slave systems must display the same firmware version. When booting, the system checks the installed software version. In the case of an error please check on which system the wrong software version is installed.

If you have any questions or remarks to the software, the contact address can be found here.

By clicking on the internet address you will be connected directly to the AVT homepage.

An e-mail can be send by clicking on the e-mail address.

The **OK** button closes the window.

7.12

What do I have to set, if I...

In the following chapters some important configurations are described. These are necessary for operation with the software and hardware options. The settings described must always be carried out. Further possibilities can be found in the relevant documentation.

7.12.1

... I want to use MAGIC TOUCH LAN?

- Necessary settings in the **MAGIC TOUCH** software:
 - (1) Open the configuration dialog in **Configuration** → **System** → **Edit** and click on the link **LAN**. Set the **Use LAN interface** option. As **Port**, enter **8453**. Details can be found in CHAPTER 7.7.3.13, page 95.
 - (2) Now switch to the **Security** link. Enter in **TCP/IP Access Protection**, the IP Address of the PC with the **MAGIC TOUCH LAN** software which is to be given access to the **MAGIC Touch** via the LAN. Details can be found in CHAPTER 7.7.3.12, page 92.
 - (3) Store all settings by pressing the **OK** key.
- Necessary settings in the **MAGIC TOUCH LAN** software:
 - (4) Open the configuration dialog via **Configuration** → **System** → **Edit** and click on the link **LAN**. Enter in **Interface settings** → **IP Address**, the address of the **MAGIC TOUCH** PC. As **Port** enter **8453**.
 - (5) Store all settings by pressing the **OK** button.

7.12.2

... I want to use MAGIC SCREENER?

– Necessary settings in the **MAGIC TOUCH** software:

- (1) Open the configuration dialog in **Configuration** → **System** → **Edit** and click on the link **Database**. Set the **Database support** option. In the **Database path** submenu set the paths for the **System database** files and **Caller database**. The path should also be entered as an UNC path ("\\\"), since this path is transmitted to **MAGIC TOUCH LAN** and **MAGIC SCREENER**. The directory, where the files are stored, must be released in the network. Details can be found in CHAPTER 7.7.3.3, page 70.
- (2) In the **MAGIC Screener remote control** menu, activate the **Enabled** option. In **Network settings** enter **8454** for the port. Details can be found in CHAPTER 7.7.3.3, page 70.
- (3) Now go to the **Security** link. Enter in **TCP/IP Access Protection**, the IP-Address of the PC with the **MAGIC SCREENER** software which shall get access to the **MAGIC Touch** via the LAN. Details can be found in CHAPTER 7.7.3.12, page 92.

- (4) Store all settings by pressing the **OK** button.

– Necessary settings in the **MAGIC Screener** software:

- (5) In **MAGIC SCREENER**, open the configuration dialog under **Administration** → **Settings** and choose the **Screener** operating mode. Set in **LAN-Settings** the **IP-Address** of the **MAGIC TOUCH** PC. As **Port** enter **8454**.
- (6) In **Screener-Settings** → **Own Screener-Number**, enter a specific telephone number (normally the number of the telephone at the seat of the **MAGIC SCREENER** PC).



If the Telephone Hybrid is operated through a PABX, the **Prefix Numbers** (see CHAPTER 7.7.3.4.3, page 75) can be suppressed for internal calls by a minus sign(' -'). For this function the PABX telephone number must be entered with a '-' prefix (Example: the PABX 130 must be entered as '-130').

- (7) Store all settings by pressing the **OK** button.

7.12.3

... I want to use the MAGIC Hybrid Keypad of the PC?

- (1) Open the keypad settings in **Configuration** → **PC Keypad**. Set in **RS232 Parameter** → **Port** the PC COM Port to which the **MAGIC Hybrid Keypad PC** will be connected.
Details can be found in CHAPTER 7.7.2, page 56.

**Windows NT4.0/2000/XP User**

When using Windows NT/2000/XP, the setting of the COM port is only possible when logged on as Administrator. Otherwise, the settings can be changed but they will not be accepted.

Log on as administrator when making a configuration.

- (2) Store all settings by pressing the **OK** button.
- (3) Connect the keypad to the COM interface of the PC. Do not forget to connect the power supply of the keypads with the power socket outlet.

7.12.4

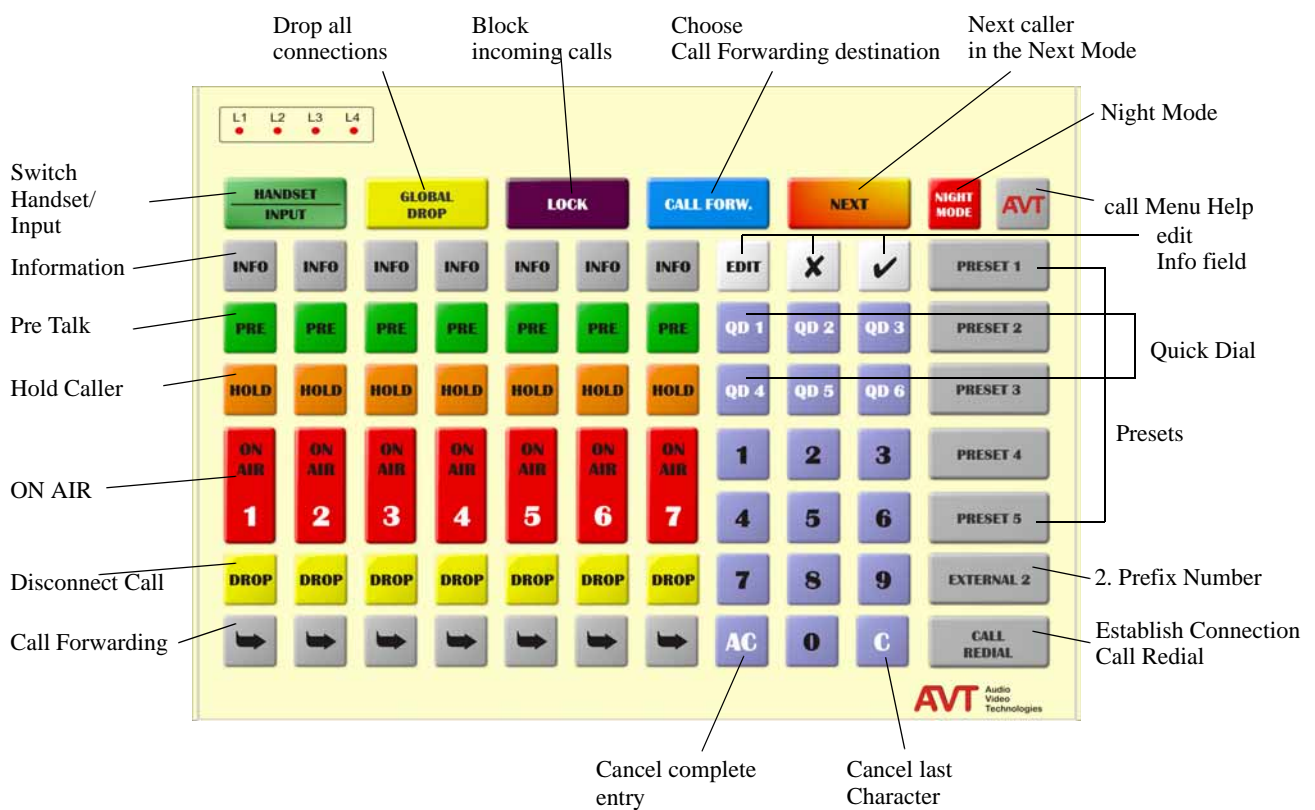
... I want to use the MAGIC Hybrid keypad as a redundant mode?

- (1) Open the configuration dialog with **Configuration** → **System** → **Edit** and click on the **General** link. Set the keypad type **Keypad connected to Hybrid**.
Details can be found in CHAPTER 7.7.3.1.9, page 68.
- (2) Connect the keypad to the LSD interface of the Master system. Do not forget to connect the mains power unit of the keypads into the power connector.

Instead of the Touchscreen it is also possible to operate via the optional *MAGIC Hybrid Keypad PC* for a maximum of seven callers, using a normal monitor. The *MAGIC Hybrid Keypad PC* is either directly connected to the PC with the *MAGIC TOUCH* or with the *MAGIC TOUCH LAN* software via a RS232 interface.

The keypad displays the most essential functions of the *MAGIC TOUCH* user interface.

FIG. 92 KEY ASSIGNMENT ON THE MAGIC HYBRID KEYPAD PC



8.1















Working with the MAGIC Hybrid Keypad

Before operating the *MAGIC Hybrid Keypad PC*, the configurations of the *MAGIC TOUCH* PC software have to be properly set. The configurations are described in CHAPTER 7.7.2.





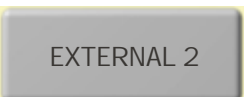
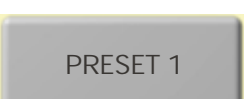






8.2

Function of the keypad

The keypad functions can be seen in the following table.

TAB. 7 KEYPAD FUNCTIONS	
Key	Description
 	Before entering a telephone number, the Call/Redial key must be pressed to open the manual call dialog. The keys 0...9 are for the inputting the number. The connection is established by pressing the Call/Redial , Pre Talk , Hold or On Air key. By pressing Call/Redial the next available channel will be selected. With the Pre Talk , Hold , On Air keys, the channel can be explicitly chosen.
	By pressing this key cancels the last charcter of an input. This key is also used to stop a function.
	Pressing this key cancels the whole entry.
 	The quick dial keys QD 1 ... QD6 are used to call a stored number directly. The number can be stored by the PC software (see CHAPTER 7.7.3.8, page 84).
	Pressing this button displays the information field of the caller (see CHAPTER 7.5.1.5, page 49).
	Puts the caller in Pre Talk . The physical Audio interface is configured by the PC software (see CHAPTER 7.7.3.14.2, page 99).
	Puts the caller on Hold . The signal heard in this mode can be specified by the PC software (see CHAPTER 7.7.3.10, page 87).
 	Puts the caller On Air . The physical Audio interface is configured by the PC software (see CHAPTER 7.7.3.14.2, page 99).
	This key drops the connection. There is no pre-confirmation on the appropriate channel. The Miscellaneous Settings → Press DROP button 1 second to hang up setting (see CHAPTER 7.7.3.1.8, page 68) is ignored by the MAGIC Hybrid Keypad PC.
	With the forwarding key, the caller can be put through to any previously stored or non-stored number. The non-stored number has then to be entered manually. The programming of the call forwarding is done by the PC software (see CHAPTER 7.7.3.4.2, page 74). The caller can be forwarded at any time, even when the telephone is ringing.
	With this key, a call to the last dialled number is set up automatically on the first free channel. If the line is busy, the number can be redialled by pressing the key once again.

TAB. 7 KEYPAD FUNCTIONS

Key	Description
	All existing connections are dropped when this key is pressed (see CHAPTER 7.5.1.2, page 45). There will be no pre-confirmation. The MAGIC Hybrid Keypad PC does not take the setting Miscellaneous Settings → Press DROP button 1 second to hang up (see CHAPTER 7.7.3.1.8, page 68) into account.
	The Pre Talk source is selected with this key. If the optional handset is connected, you can switch between the Audio input for Pre Talk and the handset microphone. If the optional AES/EBU/Analogue module is installed and a digital input for Pre Talk has been configured, the handset can only be used if the analogue Master Audio interface of the system has also been configured for Pre Talk (see CHAPTER 7.5.1.1, page 45).
	This key enables the system to be blocked for incoming calls. Outgoing calls are still possible (see CHAPTER 7.5.1.2, page 45).
	When the Next mode is activated, pressing this key puts the next caller On Air . Pressing it once again disconnects the call (or switches depending on the configuration back to Hold or Pre Talk) and the next caller is automatically put On Air (see CHAPTER 7.7.3.1.1, page 59).
	If a second prefix number has been programmed (see CHAPTER 7.7.3.4.3, page 75), it can be activated by pressing this button. This function is only available in the telephone book dialog (see CHAPTER 7.5.1.4.2, page 47).
 	By pressing the Preset 1 ... Preset 5 keys the Preset assigned to the key can be loaded (see CHAPTER 7.7.2, page 56) and (see CHAPTER 7.7.4.1, page 108).
	This key opens the dialog for changing the information about the caller (see Fig. 24, page 48).
	This key closes an open dialog.
	By pressing this button, all entries are accepted and an open dialog will be closed.
	This key activates/deactivates the Night Mode (see CHAPTER 7.10, page 120).
	The AVT button opens the About Telephone Hybrid window (see CHAPTER 7.11.1, page 121).

The optional *MAGIC Hybrid Keypad* can be used e.g. as a redundancy to the system in parallel to the PC. The number of the presentable caller lines is limited to **four** with the *MAGIC Hybrid Keypad 4*. Correspondingly, with the *MAGIC Hybrid Keypad 7* **seven** caller lines can be administered or with the *MAGIC Hybrid Keypad 12*, **twelve** lines are available.



Please note that the *MAGIC Hybrid Keypad 4/7/12* can not completely be used as a compensation for the *MAGIC TOUCH* user interface. But the essential functions are still available.

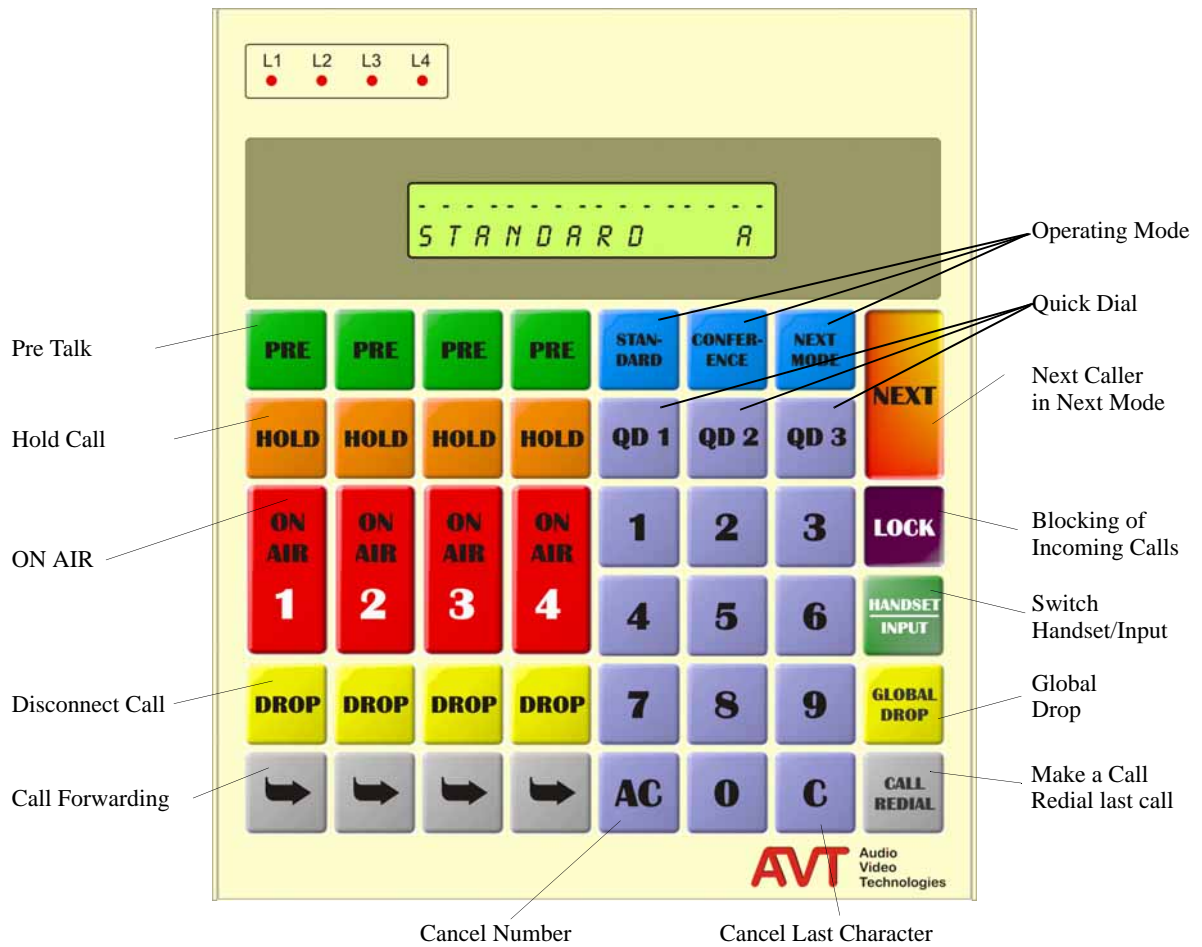
Connect the 9-pin SUB-D plug of the *MAGIC Hybrid Keypad* to the *LSD* interface (see CHAPTER A4.4, page 146) of the MAGIC system. Since the *MAGIC Hybrid Keypad* needs its own power supply, the included 5V mains must be connected as well. If everything is setup correctly, the display lights up. After the system¹ has been turned on and has booted, the message shown in the following figure can be seen on the display:

The following figure shows the control elements of the *MAGIC Hybrid Keypad 4*. *MAGIC Hybrid Keypad 7* and *12* have the same functionality. Only the Layout is different.

¹If the system was already turned on, press the „AC“ key once.

FIG. 93

KEY ASSIGNMENT ON THE MAGIC HYBRID KEYPAD



9.1


Working with the MAGIC Hybrid Keypad

Before operating the *MAGIC Hybrid Keypad*, the configurations of the *MAGIC TOUCH* PC software - as described in CHAPTER 7.7.3.1.9 - have to be properly set.

9.2

LCD-Display


General information about the current connection status and the available B channels is shown in the first line of the 2 x 20 character display. Following displays are possible:

TAB. 8 INDICATION OVERVIEW OF THE FIRST LINE OF THE DISPLAY	
Display	Meaning
> > > >	outgoing call
	incoming call
- - - -	no connection
A I R	caller is On Air
H O L D	caller is in Hold
P R E	caller is in Pre Talk
- - - >	caller is being forwarded
< - - -	forwarding connection
O A 1 ¹	caller on Audio Line 1 is On Air
O A 2	caller on Audio Line 2 is On Air
O A 3	caller on Audio Line 3 is On Air
O A 4	caller on Audio Line 4 is On Air
P R 1 ²	caller on Audio Line 1 is on Pre Talk
P R 2	caller on Audio Line 2 is on Pre Talk
P R 3	caller on Audio Line 3 is on Pre Talk
P R 4	caller on Audio Line 4 is on Pre Talk
P R 5	caller on Audio Line 5 is on Pre Talk
P R 6	caller on Audio Line 6 is on Pre Talk
? ? ? ?	undefined condition

¹ The MAGIC Hybrid Keypad 7 displays only **A1** instead of **OA 1**. The MAGIC Hybrid Keypad 12 displays only the character **1**.

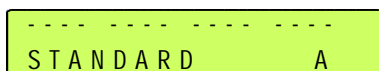
² The MAGIC Hybrid Keypad 7 displays only **P1** instead of **PR 1**. The MAGIC Hybrid Keypad 12 displays simply the character **P**.

The second line changes its function according to the mode.

The last character of the second line always shows the status of the *Pre Talk* interface. This interface can be used either with the optional handset (display **H**) or with the analogue/digital (display **A**) XLR input. The switching of the *Pre Talk* source is made with the  key.

9.2.1

Configuration of operating mode



When there is no connection, the configuration of the Hybrid is displayed.

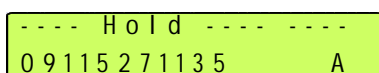
If the *MAGIC TOUCH* software is installed, the operating mode **cannot** be set via the *MAGIC Hybrid Keypad*.

The following operating modes are possible:

- *Standard*: always only one caller is *On Air* or in *Pre Talk*. All other callers are automatically in the *Hold* position.
- *Conference*: all callers in the *On Air* or *Pre Talk* modes are mixed.
- *Next*: the callers are automatically on *Hold*. By pressing the *Next* button the first caller goes *On Air*. By pressing this key once again, the connection with this caller will be dropped (or switched to *Hold* or *Pre Talk* depending on the configuration) and automatically, the next caller goes *On Air*.

9.2.2

Entering the telephone number

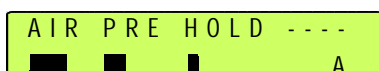


When dialling the telephone number, the dialled number is displayed. The number must be entered by the **0** ... **9** keys.

The last number entered may be cancelled by pressing the **C** key. The whole input can be cancelled by pressing the **AC** key.

9.2.3

Level meter



If there is an existing connection, the level meter is displayed¹. This display has a maximum of 4 characters and 5 segments. The smallest representable level is -34 dBu. The scale is divided into 2 dB steps. The maximum value is +6 dBu.

¹The MAGIC Hybrid Keypad 7 and the MAGIC Hybrid Keypad 12 display the level meter vertically.

9.2.4

ISDN error messages

```
>>>> PRE HOLD - - - -
B1:USer Busy      A
```

If there is a faulty connection, the ISDN provides a wealth of error messages. The meaning of these messages can be looked up in Annex A2. The message on the LCD display shows the concerned B channel in first position followed by the error message.













TAB. 9 **ISDN ERROR MESSAGES**

Error messages	Description
Unass. number	The number is not recognised by the ISDN. Check your input.
No route	No route. When this message appears the ISDN is normally overloaded. Dial again.
Normal disc.	The connection was disconnected normally.
User busy	The number called is busy.
No user resp.	The called number is not responding. Possibly the wrong number was dialled.
Call rejected	Call was rejected. Perhaps the person called has done this.
Number chang.	Dialled number has been changed.
Destin. error	Possibly the equipment is switched off. The called end is not operational.
Inval. number	Invalid number.
No line avai.	No B channel available.
No Network	No ISDN available. Check your ISDN connection.
Netw. failure	Temporary ISDN failure.
Congestion	ISDN network error. Probably the wrong ISDN protocol is selected.
Bearer capab.	The wanted service is not available.
Bearer serv.	The wanted service is not implemented.
Remote disc.	Connection was disconnected by the remote end.
Procedure er.	Distant or local ISDN procedure error.
Cannot dial	System cannot dial.







9.3

Function of the keypad

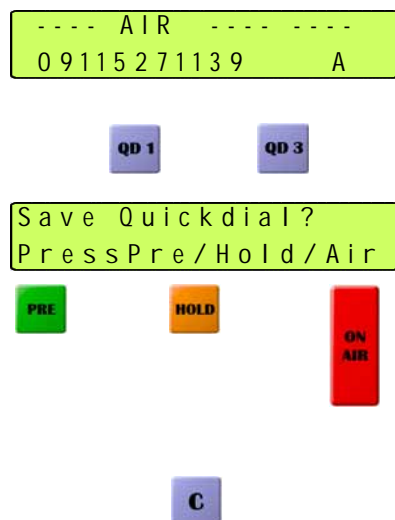
The keypad functions can be seen in the following table.

TAB. 10 KEYPAD FUNCTIONS	
Key	Description
	Standard operating mode: in this operating mode only one caller is On Air , all other callers receive the Hold signal. On the MAGIC Hybrid Keypad Standard is indicated on the display. The operating mode can only be set on the display if the MAGIC TOUCH software is not installed.
	In the On Air or Pre Talk mode, all callers are automatically mixed. On the MAGIC Hybrid Keypad, Conference is displayed. The operating mode can only be set on the display if the MAGIC TOUCH software is not running.
	The callers are automatically put on Hold . By pressing the Next key on the MAGIC Hybrid Keypad, the first caller is put On Air . Pressing this key once again disconnects the call and the next caller is put On Air , and so on. Next is displayed on the MAGIC Hybrid Keypad. The operating mode can only be set on the display if the MAGIC TOUCH software is not running.
 	The 0...9 keys are for entering the number. The connection is established by pressing the Call/Redial , Pre Talk , Hold or On Air key. When pressing Call/Redial , the next free channel is used. Via the Pre Talk , Hold , On Air buttons, the channel can explicitly be chosen.
	By pressing this key, the last character of an input is cancelled. This key is also used to stop a function.
	Pressing this key cancels the whole input.
 	The quick dial keys QD 1 ... QD 3 are used to call a stored number directly. The number can be stored either by the PC software (see CHAPTER 7.7.3.8, page 84) or by the keypad (see CHAPTER 9.4, page 136).
	Puts the caller in Pre Talk. The physical Audio interface is configured by the PC software (see CHAPTER 7.7.3.14.2, page 99).
	Puts the caller on Hold. The physical Audio interface is configured by the PC software (see CHAPTER 7.7.3.10, page 87).
	Puts the caller On Air. The physical Audio interface is configured by the PC software (see CHAPTER 7.7.3.14.2, page 99).

TAB. 10 KEYPAD FUNCTIONS

Key	Description
	This key drops the connection. There is no pre-confirmation on the appropriate channel.
	<p>With the forwarding key, the caller can be put through to any previously stored or non-stored number. If the number is not stored, it must be entered manually. The programming of this key can be done either by the PC software (see CHAPTER 7.7.3.4.2, page 74) or by the keypad (see CHAPTER 9.5, page). The caller can be forwarded at any time, even when the telephone is ringing.</p> <p>The MAGIC Hybrid Keypad 12 has only one call forwarding key. To forward a call enter the number of the line via the 0...9 keys and then press the call forwarding key.</p>
	With this key, a call to the last dialled number is set up automatically on the first free channel. If the line e.g. is busy, the number can be redialled by pressing the key once again.
	<p>All existing connections are dropped when this key is pressed. For confirmation the Drop all? message appears on the display. By pressing the key once again the connections are dropped.</p> <p>To cancel Global Drop press C and the connections will be retained.</p>
	<p>Via this key, the selection of the Pre Talk source takes place (see CHAPTER 7.5.1.1, page 45). If the optional handset is connected, you can switch between the Audio input and the handset microphone for Pre Talk. The display indicates H for handset and A for Audio input.</p> <p>The handset can only be used if the optional AES/EBU/Analogue module is installed and a digital input has been configured for Pre Talk. Additionally, the Master Audio interface of the system must also be configured for Pre Talk to use the handset.</p>
	This key enables the system to be blocked for incoming calls. Outgoing calls are still possible. Locked appears on the display (see CHAPTER 7.5.1.2, page 45).
	When the Next mode is activated pressing this key puts the next caller On Air . Pressing this key once again disconnects the call (or switches the call back to Hold or Pre Talk depending on the configuration) and the next caller is automatically put On Air (see CHAPTER 7.7.3.1.1, page 59).

9.4



Programming of the quick dial keys

The quick dial keys *QD 1* ... *QD 3* can either be programmed by the *MAGIC TOUCH* software (see CHAPTER 7.7.3.8, page 84) or directly by the keypad.

First, enter the number to be programmed.

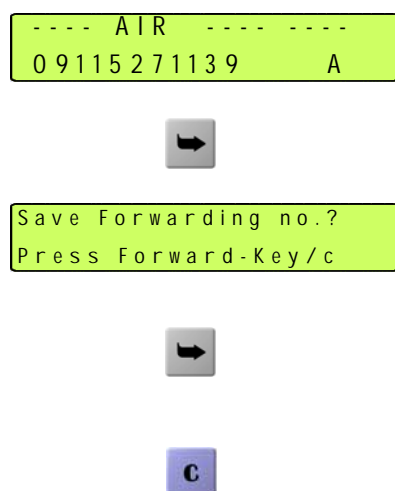
Then press any quick dial key.

On the display, the question *Save Quickdial ?* appears.

Now either *Pre Talk*, *Hold* or *On Air* can be pressed to get the desired mode you want to have when the call is accepted by the called person.

To store no number press *C*.

9.5



Programming of the call forwarding

The forwarding can either be programmed by the *MAGIC TOUCH* software or directly by the keypad (see CHAPTER 7.7.3.4.2, page 74).

First, enter the number to be programmed.

Then press any forwarding key.

On the display, the question *Save Forwarding No.?* appears.

By pressing the key once again the number is saved.

To store no number press key *C*.



If the number programmed by the keypad is different to the first call forwarding number of the *MAGIC TOUCH* software, the *MAGIC TOUCH* overwrites the call forwarding number programmed by the keypad.

If there are any errors in the system, the alarm panel with the relevant message is displayed on the *MAGIC TOUCH* user interface. Each message is prefixed with the system description (Master, Slave 1 ...3) where the error occurs.

TAB. 11 ALARM LIST

Error message	Meaning	Possible reasons/debugging
DEMUX DSP	The signal processor for multiplexing of the data can not be connected.	<ul style="list-style-type: none"> • Turn the unit off and on again. If the error still occurs, then there is probably a hardware error. Contact AVT support.
No communication with Audio Codec	The communication between the Master processor and the Audio codec is interrupted.	<ul style="list-style-type: none"> • Turn the unit off and on again. If the error still occurs, then there is probably a hardware error. Contact AVT support.
Cannot boot Audio Codec	The Master processor cannot boot the software to the Audio codec.	<ul style="list-style-type: none"> • Turn the unit off and on again. If the error still occurs, then there is probably a hardware error. Contact our support.
XILINX1, XILINX2	The Master processor cannot boot the software to the periphery components.	<ul style="list-style-type: none"> • Turn the unit off and on again. If the error still occurs, then there is probably a hardware error. Contact AVT support.
No Communication with S0-Unit	The Master processor cannot connect to the ISDN module.	<ul style="list-style-type: none"> • Possibly the software download was faulty. Turn the unit off and on again. Start the download again (see CHAPTER 7.8.5, page 115). If the error still occurs, then there is probably a hardware error. Contact AVT support.
No valid software on S0-Unit	The software on the ISDN module is invalid.	<ul style="list-style-type: none"> • Possibly the software download was faulty. Turn the unit off and on again. Start the download again (see CHAPTER 7.8.5, page 115). If the error still occurs, then there is probably a hardware error. Contact our support.
No Communication with Slave 1, 2, 3	The communication to a Slave system is interrupted.	<ul style="list-style-type: none"> • Is the slave system turned on? • Is the Extension bus cable properly connected? • Is the dongle connected? • After checking start the slave search again (see CHAPTER 7.7.3.2, page 69).

TAB. 11 ALARM LIST

Error message	Meaning	Possible reasons/debugging
Flash-EPROM Programming Error	The Flash-EPROM can not be programmed.	<ul style="list-style-type: none"> • This error can occur when storing parameters. If the error still occurs, then there is probably a hardware error. Contact our support.
No system clock	The system clock is faulty.	<ul style="list-style-type: none"> • Check the Extension bus cable at the Slave systems. • If the error still occurs at the Master system, then there is probably a hardware error. Contact our support
No connection to MAGIC ISDN Telephone Hybrid! Please check the COM Port and/or the RS232 cable	The RS232 connection between the PC and the Master system is faulty.	<ul style="list-style-type: none"> • Is the RS232 cable connected to the PC? • Is the defined COM-Port (see CHAPTER 7.3, page 41) correct? • Is the RS232 cable connected to the Master system? • Is the Master system switched on? • Was a Null modem cable (Pin 2 and Pin 3 crossed) used?

If there is a faulty connection, ISDN provides a wealth of error messages. The meaning of these error messages can be looked up in the following table. Unless the option is not blocked (see CHAPTER 7.7.3.4.1, page 73), the message is displayed on the LCD display, or in part by a fast blinking display.

TAB. 12 ISDN ERROR MESSAGES

Error message	Description
Unassigned number	The number is not recognised by the ISDN. Check your input.
No route	No route. When this message appears the ISDN is normally overloaded. Dial again.
Normal disconnect	The connection was disconnected normally.
User busy	The number called is busy.
No user response	The called number is not responding. Possibly the wrong number was dialled.
Call rejected	Call was rejected. Perhaps the person called has done this.
Number changed	Dialled number has been changed.
Destination error	Possibly the equipment is switched off. The called end is not operational.
Invalid number	Invalid number.
No line available	No B channel available.
No Network	No ISDN available. Check your ISDN connection.
Network failure	Temporary ISDN failure.
Congestion error	ISDN network error. Probably the wrong ISDN protocol is selected.
Bearer capability	The wanted service is not available.
Bearer service	The wanted service is not implemented.
Remote disconnect	Connection was disconnected by the remote end.
Procedure error	Distant or local ISDN procedure error.
Cannot dial	System cannot dial.

The following table shows the dependencies between the available systems and the installed *AES/EBU/ANALOGUE Modules* and the availability of B channels and Audio interfaces on the equipment.

TAB. 13 POSSIBLE INTERFACE COMBINATIONS

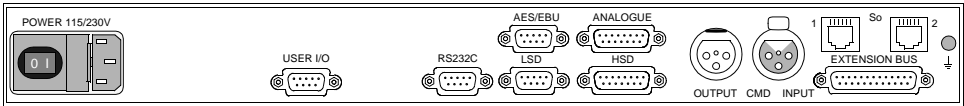
Telephone Hybrids	AES/EBU/ANALOGUE Modules	B channels	analogue Audio inter-faces	digital Audio inter-faces	Number of Audio inter-faces
1	0	4	1	0	1
	1	4	3 1	0 2	3
2	0	8	2	0	2
	1	8	4 2	0 2	4
	2	8	6 2	0 4	6
	3	8	8 2	0 4	8
3	0	12	3	0	3
	1	12	5 3	0 2	5
	2	12	6 2	0 4	6
	3	12	9 3	0 6	9
	4	12	12 4	0 6	12
	5	12	15 5	0 6	15
4	0	16	4	0	4
	1	16	6 4	0 2	6
	2	16	8 4	0 4	8
	3	16	10 4	0 6	10
	4	16	12 4	0 8	12
	5	16	14 4	0 8	14
	6	16	16 4	0 8	16

¹ The maximal available number of Audio interfaces depends on the number of B channels. The number of the Audio interfaces **and** B channels (visible channels + call forwardings) is limited to **24** (e.g. 12 Audio interfaces and 12 B channels).

A 4 I N T E R F A C E S

The following figure shows the interfaces of the system:

ABB. 94 REAR VIEW OF THE MAGIC ISDN TELEPHONE HYBRIDS

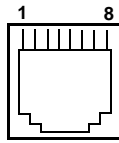


All interfaces are described as follows.

A4.1

S₀-Interface

This interface supports 2 B channels in ISDN networks. The system has two ISDN interfaces for a maximum of 4 B channels.



TAB. 14 PIN ASSIGNMENT: S₀ INTERFACE

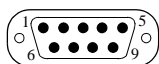
Socket: Western (8-pole) RJ45

Pin	Signal	Electrical characteristics
1	Not used	Recommendation: I.430 Data Rate: B channel: 2x64-kbit/s D channel: 16-kbit/s
2	Not used	
3	TX a Data out a	
4	RX a Data in a	
5	RX b Data in b	
6	TX b Data out b	
7	Not used	
8	Not used	

A4.2

RS232C Interface

The RS232C interface is used for configuring and monitoring the *MAGIC ISDN Telephone Hybrid* systems with a PC. To connect the system to the PC, a null modem cable, in which pin 2 and pin 3 are crossed, is required. Additionally, pin 5 GND, must be connected. All other pins are not required.



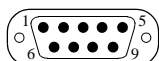
TAB. 15 PIN ASSIGNMENT: RS232C INTERFACE

Connector: RS-232C (SUB-D, 9-pole)			Electrical characteristics	
Pin	Signal			
1	Not used		Type:	DTE
2	RXD	Receive Data	Level:	V.24
3	TXD	Transmit Data	Data rate:	19200 Baud
4	DTR	Data terminal ready	Transmission range: max. 15 m	
5	GND	Ground	Protocol:	1 Start bit
6	DSR	Data set ready		8 Data bits
7	RTS	Request to send		1 Parity bit
8	CTS	Clear to send		1 Stop bit
9	Not used			

A4.3

TTL USER I/O Interface

External operating signals can be sent through this interface. Three signals are always used to drive the relay within the system.



TAB. 16 PIN ASSIGNMENT: USER I/O INTERFACE

Connector: TTL USER I/O (SUB-D, 9-pole)			Electrical characteristics	
Pin	Signal			
1	MSN switchover input +5V: MSN-1 (level without switching) GND: MSN-2		Level:	TTL/CMOS
2	used for relay 1		Rating:	20 mA
3	TTL_3_IN/OUT			
4	used for relay 2			
5	GND			
6	TTL_5_IN/OUT			
7	used for relay 3			
8	TTL_7_IN/OUT			
9	TTL_8_IN/OUT			



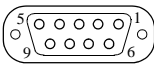
When using Slave systems, this interface is also used for the hardware dongle (Slave 1, Slave 2, Slave 3):

Pin 9: Master/Slave identification
0 (GND) = Slave, 1 (+5V) = Master

Pin 1, Pin 2 = Slave identification
Pin 2 = 0 and Pin 1 = 0: Slave 1
Pin 2 = 0 and Pin 1 = 1: Slave 2
Pin 2 = 1 and Pin 1 = 0: Slave 3

A4.4 LSD (Keypad) Interface

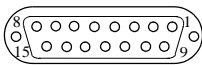
Via the LSD interface, the system can optionally be operated using the *MAGIC Hybrid Keypad 4/7/12*.



TAB. 17 PIN ASSIGNMENT: LSD (KEYPAD) INTERFACE			
Connector: LSD (SUB-D, 9-pole)			
Pin	Signal		Electrical characteristics
1	CD	Carrier Detect	Level: V.24 Transmission range: max. 15 m
2	RxD	Receive Data	
3	TxD	Transmit Data	
4	DTR	Data Terminal Ready	
5	GND	Ground	
6	DSR	Data Set Ready	
7	RTS	Request To Send	
8	CTS	Clear to Send	
9	RI	Ring Indication	

A4.5 HSD (Relay) Interface

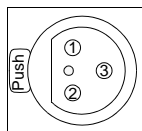
This interface has three floating relay outputs. The configuration of the interface is made via the *MAGIC TOUCH* software (see CHAPTER 7.7.3.15, page 102).



TAB. 18 PIN ASSIGNMENT: HSD (RELAY) INTERFACE			
Socket: HSD (SUB-D, 15-pole)			
Connector	Signal		Electrical characteristics
1	Shield		max. rating: 100 mA
2	Ground		
3	Relay 1a		
4	Not used		
5	Relay 2a		
6	Not used		
7	Relay 3a		
8	GND	Ground	
9	Not used		
10	Relay 1b		
11	Not used		
12	Relay 2b		
13	Not used		
14	Relay 3b		
15	Not used		

A4.6

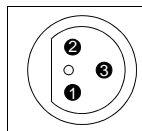
Audio Interface



TAB. 19 PIN ASSIGNMENT: AUDIO INTERFACE (INPUT)

Socket: Input (XLR)

Pin	Signal	Electrical characteristics
1	Shield	Input level: 0, +3, +6, +9 dBu
2	AUDIO IN a	Impedance: > 15 k Ω
3	AUDIO IN b	Head room: 6 dB



TAB. 20 PIN ASSIGNMENT: AUDIO INTERFACE (OUTPUT)

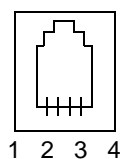
Connector: Output (XLR)

Pin	Signal	Electrical characteristics
1	Shield	Output level: 0, +3, +6, +9 dBu
2	AUDIO OUT a	Impedance: < 20 Ω
3	AUDIO OUT b	Head room: 6 dB

A4.7

Handset/MAGIC Hybrid Headset Socket

Ether the *Handset* or the *MAGIC Hybrid Headset* (see CHAPTER 3.5, page 23) are connected via this socket.



TAB. 21 PIN ASSIGNMENT: TELEPHONE HANDSET SOCKET

Socket: Input/Output (Western 4-pole)

Pin	Signal	Colour coding of the cables at the		Electrical characteristics
		Handset	Headset	
1	Output a	yellow	blue	0Microphone sensitivity: ~ 60 dB with 1-kHz
2	Input a	red	black	Microphone impedance:~ 2 k Ω
3	Input b	white	red	Earphone sensitivity:~ 97 dB
4	Output b	black	white	Handset impedance:~ 150 Ω

A4.8 Audios interfaces on the optional AES/EBU/ANALOGUE Module

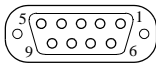
There are two digital inputs/outputs or two additional analogue inputs/outputs available on the *AES/EBU/ANALOGUE Module*. The configuration is made using the Windows PC software.



The digital and analogue Audio outputs on the modules are connected in parallel. Consequently, the signal can be used on both interfaces simultaneously.

A4.8.1 AES/EBU Audio Interface

The AES/EBU digital Audio interface is implemented as a 9 pole SUB-D socket. Therefore, the ISDN Telephone Hybrid has two digital inputs/outputs on one physical AES/EBU interface. The input as well as the outputs, have their own sample rate converters enabling a digital source of 32, 44.1 or 48-kHz to be connected directly. For synchronisation to an external clock (only 48-kHz) the word clock input or output may be used. This is implemented on the adapter as BNC socket.



TAB. 22 PIN ASSIGNMENT: AES/EBU AUDIO INTERFACE

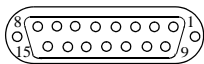
Socket: AES/EBU (SUB-D, 9-pole)		
Pin	Signal	Electrical characteristics
1	AES/EBU IN a	IEC-958 Professional word clock: TTL level 5V
2	AES/EBU IN b	
3	GND word clock 48-kHz	
4	AES/EBU OUT a	
5	AES/EBU OUT b	
6	GND AES/EBU IN	
7	Word clock 48-kHz IN	
8	Word clock 48-kHz OUT	
9	GND AES/EBU OUT	



An *AES/EBU Adapter Cable* SUB-D, 9-pole to XLR/BNC is available (Order No. 490091).

A4.8.2 Analogue Audio Interface

The additional analogue Audio interfaces on the module are available at a 15-pole SUB-D socket.



TAB. 23 PIN ASSIGNMENT: ANALOGUE AUDIO INTERFACE		
Socket: HSD (SUB-D 15-pole)		
Pin	Signal	Electrical characteristics
1	Channel 1 ¹ IN a	Input: Rated level: 0, +3, +6, +9 dBu Impedance: > 15 kΩ
2	Channel 1 ¹ IN b	
3	Channel 2 ² IN a	
4	Channel 2 ² IN b	
5	Channel 1 ¹ OUT a	Output: Rated level: 0, +3, +6, +9 dBu Impedance: < 20 Ω
6	Channel 1 ¹ OUT b	
7	Channel 2 ² OUT a	
8	Channel 2 ² OUT b	
9	GND Channel 1 ¹ IN	Head room: 6 dB
10	GND	
11	GND Channel 2 ² IN	
12	GND	
13	GND Channel 1 ¹ OUT	
14	GND	
15	GND Channel 2 ² OUT	

¹ On the AES/EBU Audio interface, channel 1 corresponds to the right channel

² On the AES/EBU Audio interface, channel 2 corresponds to the left channel

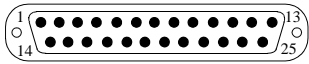


An *Analogue Adapter Cable* SUB-D, 15-pole to XLR is available (Order No. 490090).

A4.9

Extension Bus (internal data bus and control bus)

The *Extension Bus* socket is used for the cascade connection of single *MAGIC ISDN Telephone Hybrids*. The system can be upgraded at any time.



TAB. 24 PIN ASSIGNMENT: EXTENSION BUS INTERFACE		
Connector: Extension Bus (SUB-D, 25-pole)		
Port	Signal	Electrical characteristics
1	Shield	Data rate:
2	TXa Transmit Data	64-kbit/s up to 2,04-Mbit/s
3	Ca Control	Level: V.11, symmetrical
4	RXa Receive Data	Protocol for RS-485:
5	CLK48a Clock 256x48-kHz	1 Start bit
6	CLKa Clock Receive	8 Data bits
7		1 Parity bit
8	GND GND	1 Stop bit
9	TXb Transmit Data	Data rate: 19200 Bd
10	Cb Control	
11	RXb Receive Data	
12	CLK48b Clock 256x48-kHz	
13	CLKb Clock Receive	
14	CTa Control RS485-Bus	
15	CTb Control RS485-Bus	
16	C_DATAa Data RS485-Bus	
17	C_DATAb Data RS485-Bus	
18	RXD_Va Receive Data Valid	
19	RXD_Vb Receive Data Valid	
20	TXD_Va Transmit Data Valid	
21	TXD_Vb Transmit Data Valid	
22	FSa Frame Sync	
23	FSb Frame Sync	
24	reserved	
25	reserved	

Network interfaces:

- | | | |
|----------------------|-------|------|
| - 2 x S ₀ | I.430 | RJ45 |
| - Protocols | EDSS1 | |

User interfaces

- | | | |
|-------------------------|-----------------------|---------------|
| - RS232C | V.24, 19200 Bd for PC | 9-pole SUB-D |
| - USER I/O ¹ | Control signal TTL | 9-pole SUB-D |
| - LSD: | V.24 for keypad | 9-pole SUB-D |
| - HSD: | 3 x Relay | 15-pole SUB-D |

Coding algorithms

- | | |
|---------|-------------------------------|
| - G.711 | 3.1-kHz (telephone algorithm) |
|---------|-------------------------------|

Audio interface

- | | |
|--|---------------------------------------|
| - Electronic, balanced input | XLR female |
| - Electronic, balanced output | XLR male |
| - Nominal level | 0, +3, +6, +9 dBu (can be programmed) |
| - Head room | 6 dB |
| - Impedance | Input: > 15 kΩ
Output: < 20 Ω |
| - AGC pro B channel, configurable | |
| - Echo-Canceller per B channel (128 taps, 16ms Echo cancel time), configurable | |
| - Expander per B channel, configurable | |
| - Digital Mixing | |
| - Digital N-1 | |

Power supply:

- | | |
|------------------------|------------------------|
| - Alternating voltage: | 90 to 253 V (50/60 Hz) |
| - Power consumption: | max. 30 VA |

¹with the Slave it is used to identify the hardware

Measurements:

- H x W x D: 44 x 449 x 450 mm

Weight:

- approx. 6 kg

Additional information:

- Acceptable temperature: +5 °C to 40 °C
- Relative humidity: 5% to 85%

A 6

TECHNICAL DATA: MAGIC HYBRID
KEYPAD

A6.1

MAGIC Hybrid Keypad

- MAGIC Hybrid Keypad 4: Matrix: 8 x 6
- MAGIC Hybrid Keypad 7: Matrix: 8 x 12
- MAGIC Hybrid Keypad 12: Matrix: 8 x 12
- MAGIC Hybrid Keypad PC: Matrix: 8 x 12

A6.2

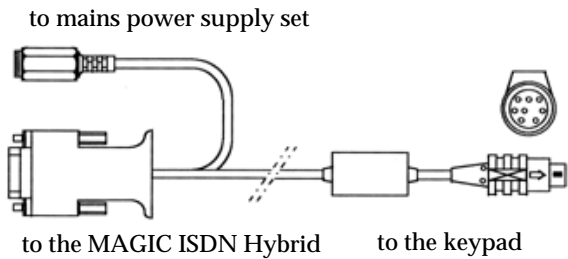
LCD Display (only MAGIC Hybrid Keypad 4/7/12)

- 2 x 20 characters
- illuminated

A6.3

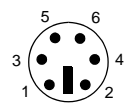
Connecting cable

ABB. 95 CONNECTING CABLE MAGIC SYSTEM - MAGIC KEYPAD



A6.4

Power supply connector to the power supply set

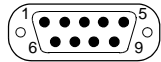


TAB. 25 PIN ASSIGNMENT: POWER SUPPLY CONNECTOR TO THE POWER SUPPLY UNIT

Connector: PS/2 Connector 6-pole		
Pin	Signal	Electrical characteristics
1	GND +5V	Voltage: 5V
2		Power: max. 1500 mA
3		
4		
5		
6		

A6.5

Connection to MAGIC Telephone Hybrid

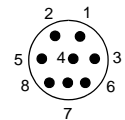


TAB. 26 PIN ASSIGNMENT: CONNECTION TO MAGIC TELEPHONE HYBRID

Connector: 9-pin SUB-D male		
Pin	Signal	Electrical characteristics
1	RXD TXD	Baudrate: 9600 Baud
2		Parität: keine
3		
4		
5	GND	
6		
7		
8		
9		

A6.6

Keypad data interface to the keypad

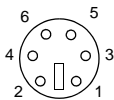


TAB. 27 PIN ASSIGNMENT: DATA INTERFACE TO THE KEYPAD

Connector: MINI-DIN connector 8-pole		
Pin	Signal	Electrical characteristics
1	RX Data GND	Baud rate: 9600 Baud
2		Parity: none
3		
4		
5	+ 5V	
6		
7		
8	TX Data	

A6.7

External power supply



TAB. 28 PIN ASSIGNMENT: POWER SUPPLY		
Connector: 6-pin PS/2 socket		
Pin	Signal	Electrical characteristics
1	GND +5V	Voltage: 5V
2		Power: max. 1500 mA
3		
4		
5		
6		

A 7 G E N E R A L

A7.1

Ordering numbers

MAGIC ISDN Telephone Hybrid Master	800051
MAGIC ISDN Telephone Hybrid Slave	800052
MAGIC TOUCH Software Update	430128

Software Options

MAGIC TOUCH LAN Software	430157
MAGIC SCREENER Software	430138
MAGIC TOUCH ADMIN Software	430162
MAGIC TOUCH ADMIN LAN Software	430166

Hardware Options

AES/EBU/ANALOG Module	450030
Analogue Adapter Cable	490090
AES/EBU Adapter Cable	490091
Handset, light grey with holder	715012
MAGIC Hybrid Headset	490087
MAGIC Hybrid Keypad 4	800054
MAGIC Hybrid Keypad 7	800058
MAGIC Hybrid Keypad 12	800056
MAGIC Hybrid KeypadPC	800055
15" TFT Touchscreen screen	490082
19" Industrial PC for MAGIC TOUCH Application	450048

A7.2

Included in delivery

- MAGIC ISDN Telephone Hybrid
- Mains cable
- 2 x S₀ telephone cables
- Self adhesive feet
- ETSI mounting brackets

Only included in Master systems:

- RS232 control cable
- MAGIC TOUCH Software
- Documentation

Only included in Slave systems:

- Hardware Dongle

A7.3

Declaration of conformity

The declaration of conformity is at the end of this manual.



Please note that the MAGIC ISDN Telefonhybrid (800051, 800052) has the hardware identification number 229711.

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CE-Konformitätserklärung
Declaration of Conformity

Name des Anbieters: AVT Audio Video Technologies GmbH
Supplier's name:

Anschrift des Anbieters: Rathsbergstrasse 17
Supplier's address D-90411 Nürnberg

erklärt, daß das Produkt
declares, that the product

Produktname(n):	MAGIC ISDN Telefonhybrid	229711
Product name(s):	MAGIC ISDN Telephone Hybrid	229711

mit den Vorschriften folgender Europäischer Richtlinien übereinstimmt
conforms to the standards of the following European directives

Nummer/Text: EN 60950 A4 Gerätesicherheit
Number/title:

Die Übereinstimmung wird nachgewiesen durch vollständige Einhaltung folgender Normen:
The conformity is evidenced by strictly meeting the following standards:

Harmonisierte Europäische Normen: EN 55022/08.94, EN 50082-1/01.92
Harmonized European Standards: EN 61000-3-2/95, EN 61000-3-3/95

Ort, Datum: Nürnberg, den **10.04.01**
Place, date:

Name(n): Wilfried Hecht
Name:

Rechtsverbindliche Unterschrift(en):
Legally binding signatures:

Telefon: +49 911 5271-120
Phone:

Diese Erklärung beinhaltet keine Zusicherung von Eigenschaften.

This declaration includes no warranty of properties.

Die Sicherheitshinweise der mitgelieferten Produktdokumentation sind zu beachten.

The safety instructions specified in the product documentation delivered must be observed.

